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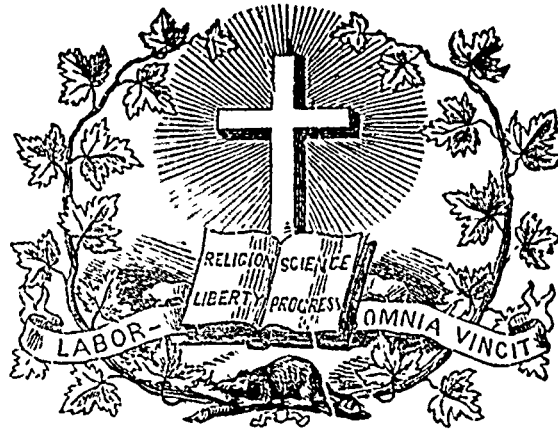
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JOURNAL OF EDUCATION.

Volume VI.

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No. 9.

SUMMARY.—**LITERATURE:** Donnacona, a poem translated from the French by Thomas Cole.—**SCIENCE:** Science in Rupert's Land.—The Steam Plough at the International Exhibition.—**EDUCATION:** The Glory of Physical Geography.—The Teacher as a Talker.—**OFFICIAL NOTICES:** Amendments to Rules and Regulations concerning Boards of Examiners.—Notice respecting Municipalities.—Appointments: Council of Public Instruction.—Boards of Examiners.—School Commissioners.—School Trustees.—Directions, Divisions, &c., of School Municipalities.—Diplomas granted by Boards of Examiners.—Notice to Teachers.—Donations to the Library of the Educational Department.—**EDITORIAL:** Meeting of the Teachers' Association of the District of Bedford.—Teachers' Diplomas.—Table showing the Jurisdiction of Boards of Examiners in each County.—Eighteenth Conference of the Teachers' Association in connection with the Jacques-Cartier Normal School.—International Courtesies and Historical Reminiscences.—Notices of Books and Publications: Miles' Canada at the International Exhibition.—Sand's Six Mille Lieues à toute Vapeur.—Mémoire sur l'Université Laval.—Provencner's Le Verger Canadien.—Les Soirées Canadiennes.—Dawson on Indian Remains.—Letters from Canada.—Agricultural Review.—McGregor's System of Logic.—**MONTHLY SUMMARY:** Educational Intelligence.—Scientific Intelligence.—Wood Cuts: Steam ploughs.—Sarracenia purpurea.

LITERATURE.

DONNACONA.

Translation of the Hon. P. J. O. Chauveau's poem, inserted in the *Journal de l'Instruction Publique* for August and September, 1861. (1)

I.

Asleep upon her height lay Stadacone,
Tall pines and sturdy oaks around
In gloomy silence, solitary, lone,
Shielding her quiet slumbers sound.
Her King, old Donnacona, in his home
Built of the bark of birch, appear'd to wait
(Dreaming of glories past or woes to come)
The sun's approach from out her eastern gate.
His conflicts ended, peace around him reign'd;
Twelve tribes had he subdued and overthrown,
Or their allegiance gain'd.
His subjects now unharmed pursued
The hare or partridge thro' the wood,—
Bears were no longer known.
Meanwhile he seem'd to rave, and on his bed
In a fierce fever lay

(1) The original, of which this is a free translation, was published first in the *Soirées Canadiennes*, a periodical printed at Quebec and exclusively devoted to Canadian literature. The main facts on which these lines are grounded as well as the Indian words and names, are taken from the *Voyage of Cartier* published under the direction of the Literary and Historical Society of Quebec in 1843. Donnacona and Taignarangu were two Indians who accompanied Cartier from Gaspé on his first voyage, and with whom he returned. Cartier says that both these Indians were false to him and gave Donnacona all kinds of warnings which made the king (as the discoverer calls the chief) restless and distrustful.

Half dreaming, as tho' visions dark and dread
Disturb'd his rest.
He had all night been talking in his sleep,
Frowning all day;
And terror seem'd to keep
A vigil in his breast;
And he had mutter'd thus in accents deep.

II.

"What brings the bearded strangers here?
What do they seek?
Why o'er the ocean vent'rous did they steer
With us to speak?
Ah! this to know our wise men have essay'd,
But tried in vain;
Exhausted ev'ry effort of their trade,
But yet in gloomy ignorance remain.
Cudoagny is dumb: the dead no more
Arise at night, but fear the stranger's God.
Ah! had I known they meant to stay,
I might have driv'en the pale-fac'd race away
And mark'd their path in blood;
But now my hopes of crushing them are o'er.
I could have swept them from the earth, but now
They hold the shore,
Have built an edifice whose turrets o'er,
Their ensigns wave.
Had I been brave,
I could have taught their chief my pow'r to know!
Shake not my father's bones within their tombs
Low in the valley laid?
I shall not sleep with them; and, all afraid,
Our children's children 'mid the glooms
Of forests hid, dispersedly shall die
Unseen of human eye,
Cursing a King whom they will blush to name,
And black'ning o'er his memory with shame!
Taignuragny has said, these strangers lie;
Their gifts are meant to cheat us and deceive;
They give to-day, to-morrow they will seize,
And I shall live my country's fate to grieve;
And when I die
Not one sole forest to my subjects leave:
Aye, of the very trees
They will make property!
Taignuragny has said, tho' thron'd in state,
Luxuriant living, deck'd with gems and gold,
Their King would fain beside,
Our country hold.
With thoughts of conquest, all his mind elate
And fill'd with pride,
Our fir-clad heights he longs to gain;
And hopes to find,
Hid in our sands, the glitt'ring grain
That makes man blind.

Up with the hatchet! O, my sons awake!
 The war club raise!
 And ye shall see the cowards fly
 Like sheep in sad amaze
 Before your rage-lit eye!
 Arise! and for your country fight or die.
 In vain, in vain, their magic baffles ours,
 And, o'er our own, extend their martial powers—
 A mighty God is theirs!
 Once as a man on earth 'tis said he came,
 And bore deep insults, tho' devoid of blame;
 Nor vex'd by human fears
 He calmly died, beset by those
 Who should have been his friends, but were his foes.
 Domagaya has said, no torments known
 Where the sun rises or he sets to rest
 Beyond yon mountain's crest,
 Invented by the subtlest of our race,
 Could equal those he underwent—
 Scourg'd, spit upon, and treated with disgrace.
 The earthquakes rent
 The earth as he departed—mounting high
 Into his native sky."

III.

So spake the King; nor was it long before,
 Torn from his country and his native shore,
 A captive was he led.
 His wives and subjects rais'd a cry—
 O Agouhanna! anguish in each eye—
 And Cartier heard and wondered.
 In pity then, for their excessive grief,
 The noble Captain said:
 Twelve moons alone (a period brief)
 And ye shall see your King again.
 Thus were they sooth'd. A league was made,
 And Cartier swore
 That safely o'er the bounding main
 He would their Chief restore.
 Twelve moons, nay five times twelve had sped,
 Summers had come and gone—
 Their Chieftain came not: and at last
 When hope was flown,
 The Stranger on their shore his anchor cast
 And told them—he was dead.

IV.

Now, Stadacone, upon thy lofty height
 No lofty pines or oaks are seen,
 The axe hath level'd all:
 But on each lofty spire, or whiten'd wall,
 Or scarp'd rock, with mossy verdure green
 And fum'd for many a fight,
 A spirit glides at night.
 Far o'er the waves it comes, from sunny France,—
 From an old *château* dim with age,
 Which has withstood all hostile rage
 Since Francis first was King.
 Converted to the faith, he died
 Believing in the God whose bloody side
 Receiv'd the lance,
 His peace with Cartier made.
 And nightly now is heard or seen his shade
 Over the city hovering.
 With him comes Domagaya, tir'd
 Of serving other lords,
 And Taigurangui too;
 And now we view,
 In death-clothes dress'd, a spectral crew
 Tho' not with fury fir'd,
 Nor arm'd with flaming swords,
 Attendant ghosts around them fly,
 And fill with joyous sounds the sky,
 As tho' they sang "Hosanna;"
 And echo, from the hills beyond,
 Their clam'rous joys respond
 With Agouhanna!

THOMAS COLB.
 Teacher.

Peninsula, Gaspé Bay North, 12th Sept., 1862.

SCIENCE.

Science in Rupert's Land.

The present year has witnessed, in the founding of the Institute of Rupert's Land, a remarkably interesting illustration of the changes which are slowly but surely revolutionising this vast continent; and giving evidence of an intellectual dawn which heralds the period when states and empires of the great northwest are to claim their place in the world's commonwealth of nations. The meeting for the formation of the Institute was held on the 12th of February, in the Court-room of Upper Fort Garry, where the Lord Bishop of Rupert's Land, as president of the Institute, delivered the opening address. After alluding to the Universities and other seats of learning in England, and to the influence they had exercised in fostering science, his Lordship referred to the striking contrast presented to the natives and colonists of the Red River Settlement in their field of labour. But, while, as he remarked, all might feel inclined to acknowledge the Universities and Colleges of Britain, and of Europe at large, as the nurseries of science, where its fitting guardians were to be looked for; and to recognise that its progress was to be anticipated under their fostering care: "Have we," asked the learned prelate, speaking in the name of his Red River auditors, "Have we any field for such pursuits? Does our land, in its present state, offer scope and opportunity for anything of the kind proposed? To this our reply is, others think so. Only the summer before last, a party of travellers passed through the Settlement and proceeded northward,—not lured by the prospect of gain; not attracted by any dazzling commercial speculation; yet fired, as was obvious to all who met them, with no less ardent enthusiasm, and eager to overcome every obstacle with this one object at heart. They wished, as you will recollect, to gain a spot from which, as they had calculated, they might obtain the best view of a marvellous phenomenon in the heavens. (1) Theirs was surely a praiseworthy ambition; and you saw in them, that science has her devoted followers, ready to encounter on her behalf any difficulties. The very same summer, I found on my arrival at Moose, that a traveller had preceded me, (2) and gone along the shores of the East Main, sent under the auspices of the Smithsonian Institute chiefly as an Oologist or collector of the eggs of wild birds. And we have yet another (3) in our territory on the Mackenzie River, the Youcon, or the shores of the Arctic Sea, who has spent two or three winters in those solitary regions, gathering specimens of the insects of the land for the same scientific body. Besides those, there have been two or three fully organized exploratory expeditions: that of the British Government under Capt. Palliser and Blakiston, with its Naturalist, Geologist and Astronomer; and that of the Canadian Government under Mr. Dawson and Professor Hind, with its reports carefully drawn up and digested, and the detailed results submitted to the observation of the public. Such is apparently the judgment of others: they survey the land and look into its treasures and find something to reward their labors. Shall we, however, think only of strangers; have we no spirit of research among ourselves? There is one present, (4) who in the midst of a laborious life, has often stolen hours from rest, looking with curious eye into the mysteries of nature, scrutinizing the beautiful texture of the insect's wing, or minutely examining the wild flower of the Prairie or the Bay. Another too there is, holding the same rank in the Hon. Company's service, whose best energies have, for many years, been given to the cause; who has pursued it unintermittingly, whether at Martin's Falls, at Norway House, or as I last saw him, full of the one topic, on the shores of Lake Superior. The name of Mr. Barnston is not unknown in Britain as that of a scientific collector, and his valuable contribution of insects from this country may be seen in the Entomological Department of the British Museum."

Dr. Schultz, in addressing the meeting, sought to indicate the field of scientific labour to be overtaken by the new Institute, and to stimulate its members to a hearty co-operation by further reference to scientific labours already successfully carried out in their

(1) The Astronomical Expedition to take observations of the Solar Eclipse of July 18th, 1860.

(2) Mr. Dressler.

(3) Mr. R. Kennicott.

(4) W. Mactavish Governor of Assiniboin, whose valuable collections of Natural History received the thanks and acknowledgments of the Smithsonian Institution in 1861.

midst:—"First," he remarked, "we shall be expected to give accurate scientific information on the Botany, Zoology, Geology, Ethnology, Meteorology, and Physical Geography of this country; to collect and exchange specimens with Societies of a like character, to publish the results of our researches, to give lists of specimens collected, and to correct the maps of this country. Here, we shall be expected to improve the condition of the country by encouraging the Arts and Manufactures, making experiments on the native plants, introducing new plants and seeds; by establishing a Library and Museum, and if assisted, an Observatory; and to answer those expectations, what have we done; what are we doing; and what can we do? In the 'Fauna Boreali Americana' I note the following passage by Sir John Richardson: 'Science is indebted to the exertions of the Hudson Bay Company for all that is known of the Ornithology of the American fur countries,' and he goes on to specify the labours and contributions of many officers of that company in this country—Mr. Light, M. Islam, Mr. Graham, Mr. Martin, Mr. Hutchins (who made valuable contributions on the habits of the northern birds), Mr. David Douglas, and others. This is what has been done in Ornithology alone; and Zoology, Botany, Meteorology, and Geology are also largely indebted to those and other observers. For what we are doing now, we need only say that year after year we find in the Reports of the Smithsonian Institution acknowledgments of valuable contributions from Governor Mactavish; and other Societies and individuals in Britain and Canada are also indebted for specimens to this indefatigable collector. Mr. Donald Gunn, a well known collector and observer; Mr. Bernard Ross, whose name is well known in Britain and Canada; Mr. Ross the well known Historian of the Colony; Mr. Bannatyne, who made valuable collections for Professor Agassiz, and many others may in like manner be referred to. And now, what may we do? First, we have advantages for collecting possessed by no other Society of a like character. The most unscientific among us while travelling could note down the appearance of the country, the character of the soil, the prevailing timber trees, the width, depth, and course of the rivers; could chip off pieces of the rock, pick up fossils, press a plant, or preserve a skin, and thus make valuable contributions to our Institute. As to the industry of those accustomed to collect, I need only direct your attention to the table before us, where you will notice specimens from the neighbourhood of the Rocky Mountains, from the north shore of Lake Superior, from the Missouri River, from the Athabasca, Great Slave Lake, Mackenzie River, and even from the shores of the Icy Sea. Those beautiful birds are from the Ornithological collections of Mr. Bannatyne; the fossils from the Geological collection of the Ven. Archdeacon Hunter, procured by himself during his residence near the Arctic Circle; others from Lake Superior, kindly given by the Lord Bishop; the Entomological specimens are from Governor Mactavish; and the collection of curiosities are samples of the workmanship of the Esquimaux,

Chippewyans, Sioux, and other Indian tribes; and I am encouraged when I see those indefatigable collectors here to-day, willing not only to give their valuable collections to the museum, but to become active working members of this Institute, and to give us from time to time the results of their observation and research."

It is impossible to look upon the foundation of such an Institute, without feeling that here, on the remote confines of civilization, we witness the establishment of an outpost of science, from whence we may look for returns of the highest interest and value. It is situated in the very midst of the diverse Indian tribes of the North West, still in a state of nature; and its President accordingly remarks on this department of investigation:—

"With the Indian tribes and all their ramifications and subdivisions, we shall invite discussion on Ethnology; with the diversified tongues and dialects which these tribes speak; philology and comparative grammar will claim attention; whilst with the vast and varied surface of the continent, and its only partially explored northern boundary, physical geography will naturally prove a subject of absorbing interest to all."

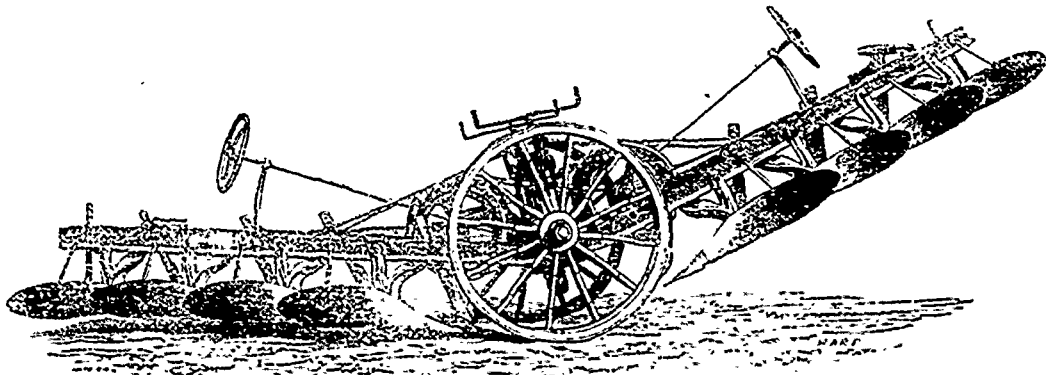
The Institute of Rupert's Land, thus happily inaugurated, includes among its members and correspondents educated men both of the resident clergy, and the officers of the Hudson's Bay Company, stationed at many important points over the vast country ranging from the Pacific to Lake Superior and towards the Arctic Sea. A great and still unexplored field invites their labours; and there is no department of science which may not be largely benefited by their combined exertions. There is also another class of labourers, to whom science already owes much, and from whose wisely directed co-operation more may be anticipated. "Missionaries," says a recent Christian reviewer, "ought to be the pioneers and promoters of science, hand in hand with the Gospel, throughout the world. In fact they have been so. And we believe it will be found on close inquiry, that the most efficient labourers in the purely spiritual field, have been on the whole, or on the average of numbers, those who also have done most to shed a brilliant lustre upon the missionary character and name in the fields of natural and scientific inquiries and studies."

D. WILSON, LL. D.

Canadian Journal of Science.

Steam Plough at the International Exhibition.

Messrs. J. and F. Howard exhibited in another form an apparatus for cultivating land with a stationary engine and windlass. They showed, in fact, two sets of tackle—one a working plough, and another a cultivator. With this difference, they consisted of a 10-horse power, double cylinder, self-propelling, or ordinary portable engine, a two-wheeled windlass, 1,400 yards of steel wire rope, a double-action cultivator, with snatch-blocks, pulleys, &c. and cul-



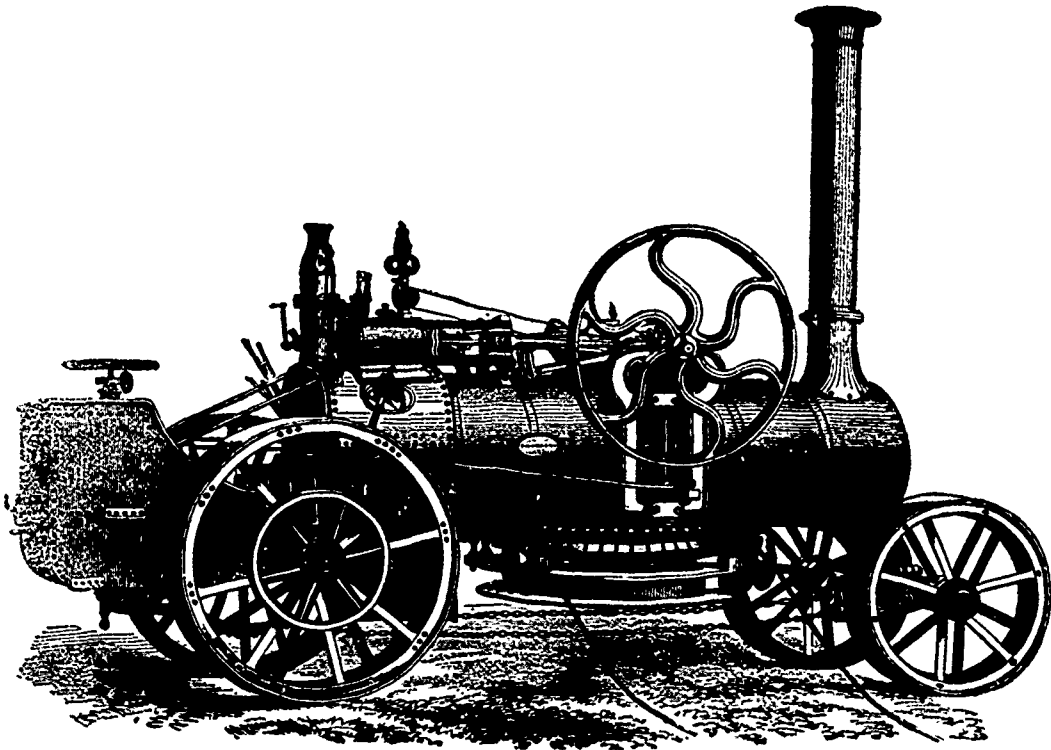
tivator; price £220. The windlass which used to be identical with Mr. Smith's now exists in a much improved form. The winding drums revolve on a very strong wrought iron axle, attached to brackets which carry the driving shaft and a pair of travelling wheels. By a simple lever movement these drums drop out of gear instantaneously, which enables the windlass man to attend to the proper coiling of the rope, on which its preservation so much depends; and also, in case of accident, to stop the implement at once, without stopping the engine. At Leeds meeting great objection was made to the loss of power which ensued in an endeavour

to keep the slack rope from sledging on the ground. The friction break then used has been dispensed with, and a new snatch block has been introduced to serve its purpose. This consists of three sheaves, two of cast iron, of the usual size, and between, forming a triangle with them, is what may be termed a floating solid sheave, with soft iron circumference, so forged as to enter the grooved periphery of its larger neighbors, and to bite the rope there. This floating sheave is carried on a radial arm, which centres on the side of the wooden frame farthest from the windlass, ascends between the two sheaves, and allows its charge two or

three inches play on either side. This triangular group is so fixed in front of the windlass that the hauling rope inevitably forces the floating wheel to bite the slack rope in the grooves of the opposing sheave. The break may now be said to be transferred from the windlass to the rope, but with this advantage, that the floating wheel in revolving exercises a constraining force on the slack rope, and diminishes the force otherwise required to haul the implement through its work, and to pull out the slack rope at the same time. The cultivator consists of a square frame, holding a series of scarifier teeth, placed back to back, so that they are ready to enter the ground in either direction. It is improved by the addition of a cutting share and moveable horn for breaking the top crust more effectually. The Leeds turn over plough is quite abandoned, and a very capital one is substituted, which does not leave much to be desired on the part of the employers of the system. It consists of a frame riding upon three wheels, one in the furrow bottom, two on the land used for steering, two sets of plough on two lever frames, hinged at the forward end of the travelling frame. A shaft, supported by the side standards of the frame, carries eccentrics set at opposite diameters, and by chains from these to the lever frames the ploughs are raised or lowered. The peculiarity is, that though the ploughs balance at half elevation, when one set is in the ground, the other set bears with about

half its weight only, and tends to lift the first set out of the land. The remainder of the weight tends to tilt the wheel frame forward.

Here, then, we have the different sets of apparatus for working by means of a fixed engine and stationary windlass. I have only omitted one devised by Mr. Fowler, but which is of little moment in comparison with his other sets of tackle to which reference is about to be made. The stationary apparatus is worked in the following manner:—Suppose it is desirable to plough a field of 10 acres. Let A B C D be the corners of the square enclosure, with a gate in the north side, A D, in the corner A. Outside that gateway the engine may be placed, with the windlass holding 700 yards of rope on each drum, on one side driven by a connecting rod, and the patent snatch-block staked down immediately in front of the drums. One rope leads straight down the side A B, passes through an anchored sheave or pulley at B, and fastens to the implement. The other rope makes a sharp bend immediately it passes the snatch block, passes through a sheave anchored in the middle of west side, D C, another at C, and runs along until it joins the implement at B, to which it is fastened. Motion being given to one drum the implement is drawn from B to C at the south end; when at C the engine is reversed, another drum is brought into motion, and the implement is brought back to B, ploughing or breaking up 30 or 48 inches in width at each bout.

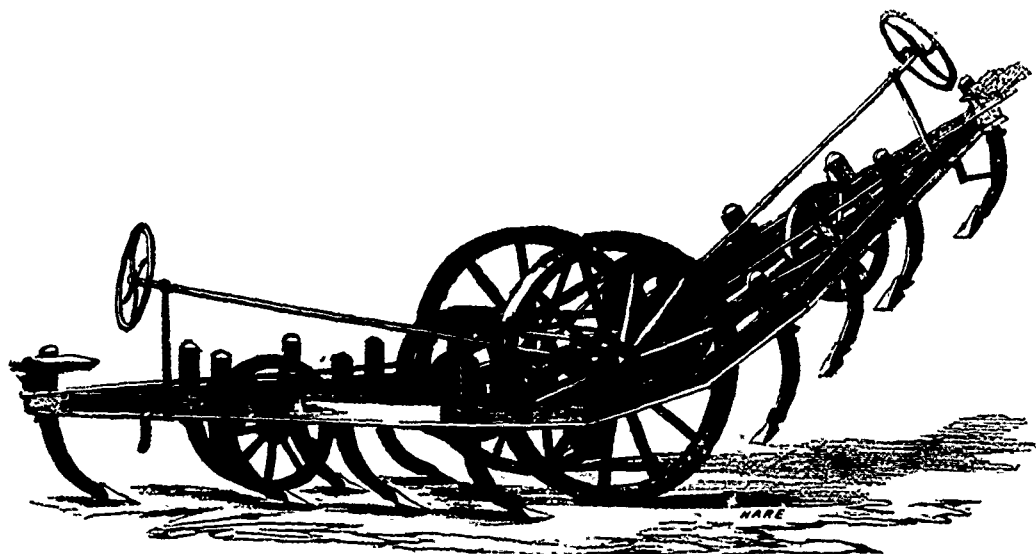


There are men stationed at C and B, who shift the anchorages 30 or 40 inches every time the implement departs from their end; and thus the plough is perpetually making its backward and forward journey, until the last furrow is turned against the north hedge, D A. Should there be four fields no larger than this to the north and east, they can be similarly dealt with without any great movement of the windlass or engine. The number of men employed may easily be ascertained: the engineman, one for the windlass, two at the anchors, one to steer the implement, and a couple of boys to move the porters which support the rope and otherwise help. The advantages of this method are manifold, inasmuch as, all expenses being calculated, there is a saving effected, as compared with two-horse ploughing, of from 1s 6d to 3s an acre; a saving which is increased in proportion to the adhesiveness of the soil. The disadvantages of the stationary windlass are only seen when it is placed in opposition to the windlass which shifts along the headland. The crushing of the rope upon itself, as it is coiled upon the windlass, the wear of the rope upon the ground, the loss of power which must necessarily be sustained when the implement is at a distance from the engine, all these are objectionable points.

Mr. Fowler is the best exponent of the travelling windlass plan. It was this, in fact, which was first to prove the superiority of steam to horse tillage. The actual contrivance which decided this victory is abandoned for one which appeared at Leeds last year for the first time, and took the lion's share of the prize offered for steam-ploughing machinery. This Leeds prize tackle was at Farningham, in no way altered. Imagine, for the sake of clearness, the same field A, B, C, D, which illustrated Howard's mode of working. The engine, with windlass or "clip drum" slung beneath the boiler, propels itself along the headland from A round to C, carrying the anchorage with it. The latter is dropped at C, and the engine takes up its own position at B. An endless wire rope stretches between, making one half turn round the "clip drum," and another round the sheave carried by the anchorage. The "clip drum" is upon a vertical axis. The single groove in which the rope runs is formed of pairs of knuckle joints or nipping pieces, which grasp the rope as it impinges upon them, and free it as it gains the straight line on the other side. The drum is driven by a shaft and pinion from the crank shaft, and the rope, thus prevented from slipping, is enabled to exercise sufficient power upon the implement to pull it through any difficulty. The

implement in which the two ends of the rope meet thus plies between the engine and the anchorage, which gradually and spontaneously move forward in the direction of A, D, from south to north. The implement consists of two opposing sets of four ploughs each, balanced upon a pair of light carriage wheels; while one set is working, the other rides in the air. It carries also a neat contrivance for gathering up the slack rope which acts when the steersman takes his seat. This is rendered necessary because of the varying length of furrows. The anchor is made to resist the side strain of the implement worked by the cutting into the ground of six disc wheels. It is moved along the headland at pleasure by the motion of the five foot sheave, which is turned by the ploughing rope. As the plough recedes from the anchor, the sheave winds up a rope stretched along the headland, and keeps the anchor opposite its work. One man at the engine, another to steer the implement, and a couple of boys to attend to the porters which carry the rope and to steer the anchor is all the labour this apparatus requires. In this case the implement is near the source of power, and the rope, instead of making as many as fourteen different bends, as in some other cases, a fact most disastrous to its integrity, makes but two; there is less difficulty in keeping the rope off the ground, and a better provision for preserving the slack rope tolerably tight. The plough is not the only implement adapted to this apparatus. There is a cultivator which takes 6 feet, and will cultivate from 16 to 20 acres a day, drawn by a double cylinder 14 horse power engine. There is also a trench or subsoil balance plough which performs an operation not to be done by horses at all, namely, the stirring of the soil to a depth of 18 inches. This apparatus, comprising 14-horse power engine and four furrow plough anchor, and 800 yards of steel-wire rope, is

priced at £875. Such a sum prevented its coming into general use. Large farmers were glad to obtain it, and in Russia and Hungary, where manual labour is scarce, or prejudiced, or sluggish, great landed proprietors esteemed themselves fortunate in finding such a strong ungrumbling slave to plough their vast tracts of land. Smaller farmers on their 300 or 400 acres of land, not thinking themselves justified in making such an outlay, patronise the less expensive, though less efficient, machines already alluded to. But Mr. Fowler having no mind to let this custom slip by him, determined to accommodate himself to the passions of small portable engines, by the invention, first of a stationary, and now of a travelling windlass independent of the engine. This gives the owner of an eight-horse portable engine all the advantages of the other tackle except extreme power, for about £285. For some readers a description of this, the greatest novelty at Farningham, may prove acceptable. One of the self-moving disc anchors is fitted with a clip drum instead of a pulley; the engine horse shafts are taken off, and a connecting iron hook: the engine to the anchor, so that when the anchor travels along the headland the engine follows it. Motion is communicated to the gear work and clip drum of the anchorage by a chain and riggers, the latter being on the engine crank shaft. It is obvious that the use of a belt which depends upon very nice adjustment of the riggers round which it passes would be quite inadmissible. Everybody in such circumstances suggests a pitch chain, but Mr. Fowler has devised a chain which will work in V shaped riggers, without slipping, made of a compound of iron and leather. This windlass is anchored forward, and gradually coils up the rope which fastens it, and so moves forward in the same way as the anchorage on the opposing headland, the plough or grubber working between.

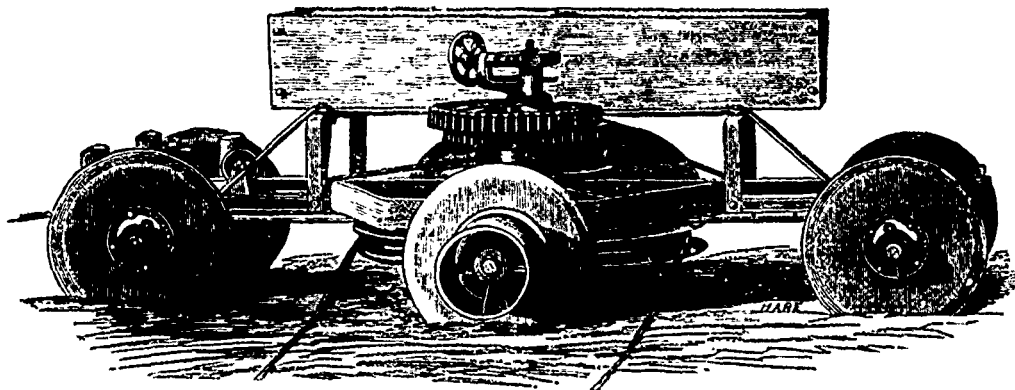


On Thursday little was done at Farningham. The new implements were tested; there was a great loss of time. On Friday the work done by Fowler and Howard was splendid. The plowing of Fowler we never saw excelled by any team work for regularity and precision of cut. He was at work upon a piece of bare land trampled by sheep. We made several observations upon the amount of work being done. They were not of the most satisfactory kind, because no trial properly speaking, was going forward, and the implements were constantly being checked by the crowd of people who paved the way, or required answers to questions. Fowler's 14 horse power, with steam pressure from 40lb. to 50lb. was pulling the 4 furrow plough, which inverted a slip of soil each about 40 inches wide, to a depth of from seven to eight inches. This operation was performed at the rate of $3\frac{1}{2}$ rods per hour, or $9\frac{1}{2}$ acres per day of ten hours. This large tackle, with the 7-tined grubber, taking 6 $\frac{1}{2}$ feet on the following day, did keep work at the rate it is said, of three acres a day. Such an achievement is perfectly unprecedented, but as we did not ourselves make the observation we will not vouch for the fact, though we believe it to be perfectly reliable. Should it be true the fact may be again repeated, and we shall then hear more about it. Mr. Fowler's small tackle, adapted to portable engines of a small power was at work at a short distance from the above. The engine was a single cylinder

portable 10-horse, running with 60lb. or 70lb. steam pressure, and the implement was a 4 furrow balance plough, with digging breasts. Each plough lifted a furrow 10 inches by $7\frac{1}{2}$. The rate of work was a little more than one acre per hour. Some part of the time a harrow was drawn on the side of the plough; but as this hid the true nature of the work, it was removed. Nothing certainly could be more complete and perfect than this operation, which fairly astonished all beholders. It required the labour of three men and two boys, and this work, be it remembered, was upon land where the turning of a furrow of the same size could scarcely be effected with less than three horses. Some calculations with respect to the other sets of tackle were made. One or two concerning the Howard's we now give, and these for the same reasons as we have stated above, must be received with considerable allowances. This firm worked the grubber with ten horse power double cylinder engine, at 75lb. taking 30 inches at the rate of nine acres in ten hours. The land was well cut and broken to a depth of seven inches. An engine of the same power, hauling the three furrow plough, which carried three furrows, 10 inches by 7 each, with 70lb. pressure, got over three rods an hour, or seven acres and a half a day. The new implement is certainly a capital one, and made regular, beautiful work, with the Kent breasts. The field operated upon was clover lea, good three horse ploughing.

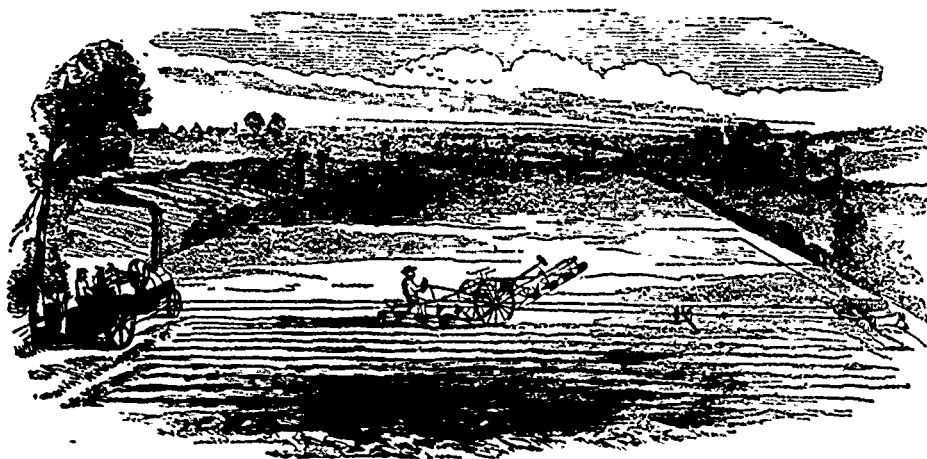
The novel features of these two sets of course attracted a great deal of scrutiny. Every one wished to see how the Howards had surmounted the difficulty which acted against them at Leeds. Some said that the new snatch block perfectly economised the power lost in holding up and dragging out the slack rope, while others considered that the rope must needs be much worn and bent in passing through it. As this is a question which will be decided in a very short time by experience there is not much need for an opinion. The wear, at any rate, cannot be so great in the case of the travelling windlass with the eight hundred yards of endless rope making a half turn round two sheaves. A good deal

is said because Fowler does not plough his headlands. The fact is, not that he cannot do so, but that it proves to be most economical to let the tackle go on to another field rather than be flogging about a little bit of land which can be ploughed by a team of horses for less money. If we look far enough, too, it requires no great gift of prophecy to foresee the time when these headlands will be permanent roads, hedges being done away with. Where will the present objection then be? The support of the rope has been more an object of attention than ever, since it is in the wear of this member of the apparatus that the chief expense lies. Howard and Fowler now sustain it thoroughly. Their competitors were some-



what careless in this respect, and their expenditure of power compared with work done was consequently much greater. Mr. Smith and those who worked on his plan were upon heavy land at a considerable distance from the station. They experienced however no lack of attention. Their work was useful but it lacked that superiority which belonged to the ploughing, cultivating, and digging already noticed. By way of summary we may say the Farningham

exhibition indicates a very considerable advance, tending to further the practice of steam culture amongst the ordinary tenant farmers of this country. This conclusion is confirmed by the numbers of orders taken, especially by Mr. Fowler and Messrs. Howard. We believe between forty and fifty sets have been purchased, many to go abroad, and some to lend their efficient aid for the pulverisation of our tenacious clays.—*L. C. Agricultural Review.*



EDUCATION.

The Glory of Physical Geography,

Physical geography makes the whole world kin. Of all the departments in the domains of physical science, it is the most Christianizing. Astronomy is grand and sublime; but astronomy overpowers with its infinities, overwhelms with its immensities. Physical geography charms with its wonders, and delights with the benignity of its economy.—Astronomy ignores the existence of man;—physical geography confesses that existence, and is based on the Biblical doctrine that the earth was made for man. Upon no other theory can it be studied; upon no other theory can its phenomena be reconciled. The astronomer computes an ephemeris

for his comets; predicts their return; tells the masses of the planets, and measures by figures the distance of stars. But whether stars, planets or comets be peopled or not, is, in his arguments, theories and calculations, of no consequence whatever. He regards the light and heat of the sun as emanations—forces to guide the planets in their orbits, and light comets in their flight—nothing more. But the physical geographer, when he warms himself by the coal fire in winter, or studies by the light of the gas burner at night, recognizes in the light and heat which he then enjoys the identical light and heat which came from the sun years ago, and which with provident care and hands benignant have been bottled away in the shape of a mineral, and stored in the bowels of the earth for man's use, thence to be taken at his convenience, and liberated at will for his manifold purposes. The masters of this newly ordained science will teach our sons to regard some of the commonest things as the most important agents in the physical economy of our planet. They are also mighty ministers of the

Creator. Take a glass of water and ask the student of physical geography to explain a portion only of its multitudinous offices in helping to make this earth fit for man's habitation. He may recognize in it a drop of the very same which watered the garden of Eden when Adam was there.—Escaping thence through the veins of the earth into the rivers, it reached the sea; passing along its channels of circulation, it was conveyed far away by its currents to those springs in the ocean which feed the winds with vapours for rains among the mountains. Taking up the heat in those Southern climes, where otherwise it would become excessive, it bottles it away in its own little vesicles. These are invisible, but rendering the heat latent and innocuous, they pass like sightless couriers of the air through their appointed channels, and arrive in the upper sky. The mountain draws the heat from them; they are formed into clouds, and condensed into rains, which coming to the earth make it "soft with showers," causing the trees of the field to clap their hands, the valleys to shout, and the mountains to sing. Thus the earth is made to yield her increase, and the heart of man is glad.

Nor does the office of this glass of water, in the physical economy end here; it has brought heat from the sea in the Southern hemisphere to be set free for the regulation of our climates; it has ministered to the green plants, and given meat and drink to man and beast. It has now to cater among the rocks for the insects of the sea. Eating away the mountains, it fills up the valleys, and then loaded with lime and salts of various minerals, it goes singing, and dancing, and leaping back to the sea, owning man by the way as a task master; turning mills, driving machinery, transporting merchandize for him, and finally reaching the ocean, it there joins the currents to be conveyed to its appointed place, which it never fails to reach in due time with food in due quantities for the inhabitants of the deep, and with materials of the right kind to be elaborated in the workshops of the sea into pearls, corals and islands, all for man's use. Thus the right-minded student of this science is brought to recognize in the dewdrop the materials of which He who "walketh upon the wings of the wind" maketh his chariot. He also discovers in the raindrop a clue by which the Christian philosopher may be conducted into the very chambers from which the hills are watered. I have been blamed by men of science, both in this country and in England, for quoting the Bible in confirmation of the doctrines of physical geography. The Bible, they say, was not written for scientific purposes, and is therefore of no authority in matters of science. I beg pardon; the Bible is authority for everything it teaches. What would you think of the historian who should refuse to consult the historical records of the Bible because the Bible was not written for the purpose of history? The Bible is true; and science is true. The agents concerned in the physical economy of our planet are ministers of His who made both it and the Bible. The records which He has chosen to make through the agency of these ministers of His upon the crust of the earth, are as true as the records which by the hands of His prophets and servants He has been pleased to make in the Book of Life.

They are both true; and when men of science with vain and hasty conceit announce the discovery of disagreement between them, rely upon it, the fault is not with the Witness of His records, but with the "worm" who essays to interpret evidence which he does not understand.

When I, a pioneer in one department of this beautiful science, discover the truths of revelation and the truths of science reflecting light one upon the other, and each sustaining the other, how can I, as a truth-loving, knowledge-seeking man, fail to point out the beauty, and to rejoice in its discovery? Reticence on such an occasion would be sin, and were I to suppress the emotion with which such discoveries ought to stir the soul, the waves of the sea would lift up their voice, and the very stones of the earth cry out against me.

As a student of physical geography, I regard earth, sea, air and water as parts of a machine, pieces of mechanism not made with hands, but to which, nevertheless, certain offices have been assigned in the terrestrial economy. It is good and profitable to seek to find out these offices, and point them out to our fellows; and when, after patient research, I am led to the discovery of any one of them, I feel with the astronomer of old, as though I had "thought one of God's thoughts," and tremble.

Thus, as we progress with our science, we are permitted now and then to point out here and there in the physical machinery of the earth a design of the Great Architect when he planned it all. Take the little nautili. Where do the fragile creatures go? What directing hand guides them from sea to sea? What breeze fills the violet sails of their frail little craft, and by whose skill is it enabled

to brave the sea, and defy the fury of the gale? What mysterious compass directs the flotilla of these delicate and graceful argonauts? Coming down from the Indian Ocean, and arriving off the stormy Cape, they separate, the one part steering for the Pacific, the other standing for the Atlantic. Soon the ephemeral life that animates these tiny navigators will be extinct; but the same power which cared for them in life now guides them in death. For though dead, their task in the physical economy of our planet is not yet finished, nor have they ceased to afford instruction in philosophy. The frail shell is now to be drawn to distant seas by the lower currents. Like the leaf carried through the air by the wind, the lifeless remains descend from depth to depth by an insensible fall even to the appointed burial-place on the bottom of the deep; there to be collected into heaps and gathered into beds which at some day are to appear above the surface, a storehouse rich with fertilizing ingredients for man's use.

Some day science will sound the depth to which this dead shell has fallen, and the little creatures will perhaps afford solution for a problem a long time unsolved; for it may be the means of revealing the existence of the submarine currents that have carried it off, and of enabling the physical geographer to trace out the secret paths of the sea.

The Church, ere physical geography had yet attained to the dignity of a science in our schools, and even before man had endowed it with a name, saw and appreciated its dignity, the virtue of its chief agents. In her services she teaches her children in their songs of praise to call upon certain physical agents, principals, in this newly established department of human knowledge: upon the waters above the firmament; upon showers and dew; wind, fire and heat; winter and summer; frost and cold; ice and snow; night and day; light and darkness; lightning and clouds; mountains and hills; green things, trees and plants; whales, and all things that move in the waters; fowls of the air, with beasts and cattle; to bless, praise and magnify the Lord.

To reveal to man the offices of these agents in making the earth his fit dwelling place, is the object of physical geography. Said I not well that of all the sciences physical geography is the most Christianizing in its influences. *Lieut. Maury.*

The Teacher as a Talker.

He should be an easy one. Of all men he most needs fluency of speech. A few disagreeable twitchings of face and sawings of hand have nearly destroyed my interest in the utterance of one of the best thinkers I have ever known. How much more difficult is it, then, for the young mind to maintain an interest in the talking of the teacher who has to labor to work even the most commonplace thoughts into words. What sorer affliction anywhere than a hard speaker? Is not the wonder that the young rogues stand as well as they do this *belaboring* with words?

The most prudent teacher must talk much, and physically to talk easily is of no slight importance.

2. The teacher should be a *ready* speaker: a minute man in the use of verbal explosives. Not merely or principally in the enunciation of theories in the great assemblies where pedagogues congregate, but before his daily classes. His mind and tongue should be set like the most delicate hair trigger; he should be able to bring down mental birds, as they flit by, "on the wing."

3. A forcible talker the teacher should surely be, and to be such he must be *clear*. This is the most important quality in any speaker's style: how doubly needful in that of him who deals with young, undisciplined minds. And to speak clearly we must think clearly. A wonderful reflex influence speaking and thinking have upon each other. Clear streams don't flow in muddy channels, and, if you and I can't use language to make a pupil "see" some point, had we not better inquire if the root of the matter is really in us? Why do our public men say they "can't talk to children"? Not because their great ideas can't be compressed enough to enter juvenile minds, but because such minds will be interested in nothing but good and *clear* sense.

A clear, forcible style must also be *terse*. Every word in a sentence is either a burden or a support. And like a chaste pillar, for beauty or strength, every proposition should bear no needless weight. "Who is it that darkeneth counsel with words without knowledge?" I suppose the truth must be told, the answer must be given:—the careless teacher. When I have heard a speaker make a most excellent point, and then, instead of stopping, continue to qualify the first or make another, until both are spoiled, I think of a painter, who, wanting just to touch some lineament of an already finished picture, finishes it, indeed, as I could, by drop-

ping his brush upon its face. How much harder it is to know *when* to stop talking than how to begin! But the forcible, successful teacher must be *earnest*. Hear the best authority on this subject: Clearness, force, earnestness, are the qualities which produce conviction in minds of any age. If a teacher stops to take one gape, when attempting to illustrate some thought, be assured, meanwhile his pupils will take two. A teacher's soul must be in his work, or it will not breathe forth in his words. Ah, we love the calm self-possession of the good disciplinarian, but never would we have it purchased at the price of that enthusiasm which fires up its possessor, even before his little audience.

4. An eloquent talker, and this is what he must be, if successful. Yes, let the law sprig laugh, and the young divine sneer at the thought of eloquent tones issuing from the schoolmaster's desk;—the man who can stand daily before the piercing eyes and plastic minds of children and feel not interest enough in the truth he is presenting or in the welfare of his immortal charge to rouse in his breast some eloquent fire, has no soul for eloquence.

5. A discreet talker, not a long, random declaimer. Truth, pertinent truth and fact, will form the basis of all his eloquence;—its limit be utility. No man more than the teacher, needs to know just when to speak, what to say, how to say it, or (hardest of all) when to stop. Judgment, judgment is the great thing in every business of life. I would give more for some generals who have handled one regiment, in one battle, than for some others who have spent two score years in military life. Far are we from despising all proper and needful aids to any profession; we feel two sensibly the need of them in our own, but yet we do believe that unless nature has *instituted* certain faculties in a man and given him certain normal principles, all exotics planted by institutes and watered by normal schools will bear little fruit.

I have little patience with those who speak of that quality as the only one the teacher need possess. A *wooden* man is patient, or at least, insensible. But the teacher without tremendous energy behind his patience is a poor affair. Upon how many and various things the teacher must decide, and the decision, too, must be instant. When should come the gentle reproof, when the kind word of encouragement, when the stinging sarcasm, when the stern command?

And do not suppose we think the teacher should be ever lecturing his pupils, either on morals or class studies. O, the *power of silence*, the force of a motion or a look!—the pressure of a quiet, self-reliant reserve force upon a school. We envy, at least we would emulate, the power of the man who is so completely master of himself that the worst school can draw from him no word of irritation, whose true dignity and self-respect a legion of bad boys could not disturb. Such an one may strike if occasion requires, but will never scold.

Fellow teachers, if you forget all my words, remember those of teachers inspired.

"He that ruleth his own spirit is mightier than he that ruleth a city." Such an one will rule others. "Words, fitly spoken, are like apples of gold in pictures of silver. If there be any place where such "pictures" should be hung, it is in the school-room, and the teacher is to hang them there. "For every idle word that men speak they shall be called to give an account thereof in the day of Judgment." How great the responsibility, then, of him whose every word is echoed in scores of young hearts.

G. W. BRONSON.

Rhode Island Schoolmaster.

OFFICIAL NOTICES.



AMENDMENTS to "Rules and Regulations for the establishment of New Boards of Examiners and to define the Jurisdiction of old Boards;" also to "Rules and Regulations for the Examination of Candidates for Teachers' Certificates or Diplomas in Lower Canada."

The Council of Public Instruction, at its last quarterly meeting (held on the 12th August, 1862), passed the following Resolutions, which His Excellency the Governor General in Council, on the 22nd of said month, was pleased to approve, viz:—

1. The new Board of Examiners for the Counties of Shefford, Brome, and Missisquoi shall meet alternately at Waterloo, in the County of

Shefford, and at Sweetsburgh, in the County of Missisquoi,—the first meeting to be held at Sweetsburgh.

2. Whenever a new Board of Examiners shall be organized, it shall (unless the appointed time for a quarterly meeting be near at hand) hold a meeting for the examination of candidates as promptly as possible, giving public notice (in English and in French) eight days beforehand, in one of the newspapers of the place of meeting, or if no newspaper be issued there, in one of those published in the nearest locality. The required notice must be given by the person whose name stands first in the Commission.

LOUIS GIARD,
Recording Clerk.

NOTICE RESPECTING MUNICIPALITIES.

Education Office, Montreal, Sept. 1st 1862.

Annexations, divisions or erections of school municipalities shall in future take place only from May 1st to June 15th, each year, and come into effect on the first of July then ensuing; and all applications of this nature shall have to be transmitted to the Superintendent of Education before the 1st May.

By Order,

LOUIS GIARD,
Secretary.

A P P O I N T M E N T S .

COUNCIL OF PUBLIC INSTRUCTION

His Excellency the Governor General in Council was pleased, on the 12th September 1862, to appoint the Reverend William Tarabull Leach, D. C. L., to be a member of the Council of Public Instruction for Lower Canada, in the room and stead of the Right Reverend Francis Fulford, Lord Bishop of Montreal, and Metropolitan, resigned.

BOARDS OF EXAMINERS.

His Excellency the Governor General in Council was pleased, on the 12 September 1862, to appoint the Reverend John Torrance to be a member of the Board of Examiners of Three Rivers, in the room and stead of the Reverend George Heaton, who has left the district.

His Excellency the Governor General in Council was pleased, on the 6th August last, to make the following appointments, viz:—

Rev. Louis Desjardins, Rev. Alphonse Winter, Priests; Louis George Harper, George Le Bouthillier, Louis Boucher, and Léandre Dagneault, Esquires, to be members of the Gaspé Board of Examiners; the three first named, in the room of Rev. Silas Crosse, Jean C. Belleau and Philippe Le Bouthillier, Esquires, resigned; and the two next named (Messrs. G. Le Bouthillier and L. Boucher) in the room of John Fauvel and Owen Thomas Connick, Esquires, whose commission has been revoked; Mr. Dagneault having been appointed as an additional member.

His Excellency the Governor General in Council was pleased, on the 22nd August last, to make the following appointments, viz:—

Rev. François Michel, Priest; Alfred Driacoll, James Coleman, Jean Delisle, Alexandre Bourgeau, and James McArthur, Esquires, to be members of the Ottawa Board of Examiners, in the room of Rev. Dr. Sykes. Rev. Dr. Lynch, A. Larue, L. M. Coullée, John Doyle, and John Foran, Esquires, resigned.

George E. White, George M. Judgson, François-Xavier Bastien, Robert W. Hardinge and Thomas McVeigh, Esquires, to be members of the new Board of Examiners for the County of Pontiac, to meet at Portage du Fort.

Lord Adolphus Aylmer, Baron of Balrath, Revds. Luc Trauan and Jean Prince, curés, Rev. David Dunkerley, Jean Baptiste Richard, William Evans Jones, A. M., and Thomas Brady, Esquires, to be members of the new Board of Examiners for the Counties of Richmond, Drummond and Wolfe,—to meet at Richmond.

Revds. Louis Proulx, curé, Honoré Grenier, curé, John Nelligan, curé, Honorable Elzéar Duchesnay; Alexandre de Léry, Richard Achille Fortier and Jean Baptiste Bonneville, Esquires, to be members of the new Board of Examiners of the County of Beauce,—to meet at Ste. Marie de la Beauce.

Revds. Jean Baptiste Gagnon, curé, Louis Antoine Martel, curé, Joseph Hoffman, curé; Pierre Alexis Tremblay, Ovide Bossé, Jean Baptiste Plamondon, and John Kane, Esquires, to be members of the new Board of Examiners for the Counties of Chicoutimi, Charlevoix, and Saguenay,—to meet at Chicoutimi.

Revds. Gabriel Nadeau, curé, Epiphane Lapointe, curé, François Adolphe Blouin, curé, George Potvin, Priest; François Magloire Hudon, Pierre Louis Gauvreau and Thomas Déchéne, Esquires, to be members of the new Board of Examiners of the County of Rimouski,—to meet at Rimouski.

SCHOOL COMMISSIONERS.

His Excellency the Governor General in Council, on the 6th August, 1862, was pleased to approve of the following appointments of School Commissioners:

County of Lotbinière.—St. Agapit : Messrs. Louis Olivier, Louis Lafrance, Flavien Demers, Jean Vernet and Denis Fréchette.

County of Ottawa.—Hartwell and Ripon : Messrs. Jean-Baptiste Desabrais, Jean-Baptiste Perrier, Emerie Sabourin, David Groleau and Damaso Seguin.

County of Two Mountains.—St. Augustin : Mr. Joseph Ovide Gagnon.

County of Wolfe.—Wolfestown : Messrs. Magloire Labrecque, Janvier Houde, Victor Pelletier, Patrick Larkin and John Higaty ; with Mr. Louis O. Pâquette as Secretary-Treasurer.

His Excellency the Governor General in Council, on the 22nd ult., was pleased to approve of the following appointments of School Commissioners :

County of Gaspé.—Cap Désespoir : Messrs. Benjamin Trachy, Joseph Couture, Louis Lelièvre, Pierre Couture, fils de François, and William O'Brien.

Same County.—Percé. Messrs. Joseph Latereur and Ambroise Lévesque.

City of Quebec.—(Catholics) Revs. Z. Charest, curé, B. McGauran, curé and P. G. Clarke, Vicar.

County of Joliette.—Ste. Béatrix : Messrs. Norbert Ladoucur, Joseph Jetté, Fabien Bellanger, Godefroy Chaput and Eusébe Lepage.

County of Arthabaska.—St. Vincent : Mr. Charles Bergeron.

County of Two Mountains.—St. Sauveur : Messrs. Louis Alarie, Godefroy Demers and Louis Beaulieu.

His Excellency the Governor General in Council was pleased, on the 12th inst., to approve of the following appointments of School Commissioners, viz.,—

County of Ottawa.—St. Etienne : Messrs. Thomas McGoey, Michael Shea, Patrick Davy, Michael Grimes, and James Mullooney.

County of Pontiac.—Waltham : Messrs. François X. Turcotte, Louis Carrel, John H. Coghan, Patrick Whalen, and John Creighton.

Counties of Quebec and Portneuf.—Cap Rouge : Mr. Romuald Bergeron.

County of Beauce.—Ste. Marie : Messrs. André Lacroix, and Léon Gilbert.

County of Maskinongé.—Hunterstown : Messrs. Antoine Lafresnière, Jean Carufel, Pierre Mineau, Joseph Lambert, and Jean-Bte. Collard.

County of Richmond.—Stoke : Messrs. Goodman Randall, Anthony Byron, Asa Hall, Joseph Randall, and Alonzo Rolf.

County of Berthier.—Berthier : Mr. Frédéric Nolin.

County of Charlevoix.—St. Placide : Messrs. Luc Guay, Joseph Côté, Euchariste Gauthier, Albert Boivin, and Hyppolite Guay.

County of Gaspé.—Ste. Anne des Monts : Mr. Joseph Lafontaine.

County of St. Johns.—St. Johns : Rev. Charles Larocque, curé ; François H. Merchand, Esq., and Messrs. Moïse Thérien, Adolphe Rémillard, and John Rossiter.

SCHOOL TRUSTEES.

His Excellency the Governor General in Council was pleased, on the 12th instant, to approve of the appointment of Mr. David Côté as a School Trustee for the Municipality of Shefford, in the County of Shefford.

ERRECTIONS, DIVISIONS, &c., OF SCHOOL MUNICIPALITIES.

His Excellency the Governor General in Council, on the 2nd August last, was pleased,

1. To erect the new parish of Ste. Béatrix, in the County of Joliette, into a school municipality, with the following limits : Bounded on the north-west by the Township of Cathcart, on the south-east by the line (*trait carré*) of the 9th Range of the Seigneurie of d'Aillebout ; thence, following the said line as far as the line between Lots, Nos. 22 and 21 of the 9th and 8th Ranges of said Seigneurie, to the line of the 7th Range, by which it shall be bounded ; on the north-east, by the main line between the said Seigneurie of d'Aillebout and that of Ramsay ; and on the south-west, by the line dividing the Township of Kildare from the Township of Cathcart and the aforesaid Seigneurie of d'Aillebout.

2. To detach the Township of Stoke from the School Municipality of Windsor, in the County of Richmond, and erect it into a separate school municipality, with the name and limits of the said township.

His Excellency the Governor General in Council, on the 6th August last, was pleased,

1. To erect the Township of Garthby, in the County of Wolfe, into a school municipality, with the name and limits of said township.

2. To erect the Township of Wolfestown, in the County of Wolfe, into a school municipality, with the name and limits of this township.

3. To erect the Townships of Hartwell and Ripon, in the County of Ottawa, into a school municipality, under the name of the *School Municipality of Hartwell and Ripon* ; and with the same limits as the said townships.

4. To detach from the School Municipality of St. Gilles, in the

County of Lotbinière, the tract hereinafter described, and to erect it into a school municipality, under the name of the *School Municipality of St. Agapit*, bounded as follows : On the south by the lands of J. B. Laporte and the unceded lands of St. Gilles ; on the west by the lands known as those of *des Mères* and the Seigneurial line of Tilly ; on the north by the lands of Thomas Têtu, the elder ; on the east, by the lands of St. Gilles, situated on Craig Road.

5. To erect the Parish of St. Etienne of Chelsea, in the County of Ottawa, into a school municipality, under the name of the *School Municipality of St. Etienne*, bounded as follows : From the line dividing the Townships of Hull and Templeton, thence running west with the line between the 5th and 6th Ranges of Hull to the road known as the *Gatineau Road*, west of the Gatineau River ; thence following the said road south to Lot No. 4 of the fourth Range, belonging to Thomas C. Brigham ; thence following the road which traverses it on the west and runs along the foot of the Mountain, to Lot No. 22, between the 7th and 8th Ranges of the said Township of Hull, thence following this last Concession to the line of the Township of Eardley, and thence between the 5th and 6th Concessions of Eardley to the lateral line between the 3rd and 4th Lots ; thence following on the north the said lateral line to the Concession line between the 11th and 12th Ranges of the Township of Eardley ; thence east to the line between the Townships of Hull and Eardley ; thence following the line between the Townships of Hull and Wakefield, and running east along the line of the Township of Wakefield to the line between the Township of Hull and that of Templeton ; thence southerly along the line to that between the 5th and 6th Ranges of the said Township of Hull.

His Excellency the Governor General in Council, on the 22nd August last, was pleased to annex to the School Municipality of L'Assomption, in the County of L'Assomption, that portion of territory comprised in the following limits : From and including the land of Alexandre St. Jean, adjoining that of Napoléon Thibault, to the land of Bénoni St. Jean inclusive, adjoining the line of division between the Parish of L'Assomption and that of Repentigny.

His Excellency the Governor General in Council was pleased, on the 15th May last, to separate the Townships of Restigouche and Matapédia, in the County of Bonaventure, and to form each into a distinct school municipality, with the names and limits of said townships respectively.

DIPLOMAS GRANTED.

PROTESTANT BOARD OF EXAMINERS FOR THE DISTRICT OF MONTREAL.

Misses Eleanor Gaw and Mary Whitwell Nere have obtained the first class Model-school diploma. (English).

Mr. Josiah Bail has obtained a first class Elementary diploma. (English).—5th August, 1862.

T. A. GIBSON,
Secretary.

CATHOLIC BOARD OF EXAMINERS FOR THE DISTRICT OF MONTREAL.

Mr. George Morand, Madame Jean Bte. Roussau (Thersile Miville), Misses Philomène Labelle, Lucie Hudon dite Beaulieu, Joséphine Charbonneau, Nathalie Bachand, Alphonsine Payette and Louise Lafontaine obtained the Elementary diploma, on the 5th June, 1862.

Mr. Ernest Nightingale obtained a first class Elementary diploma (English and French) ; Messrs. Napoléon Latrémouille and Odilon Dufort obtained a first class French, and a second class English, Elementary diploma ; Misses Louise Martel, Virginie Hamelin, Rose Gravel, Sophie Emma Blanchard dite Renaud, Delphine Labelle and Philomène Hnaud, a first class Elementary diploma (French) ; and Misses Adèle Vautrin, Elizabeth Métras, Adèle Brien Desrochers and Philomène Chaurat a second class Elementary diploma (French), on the 5th August, 1862.

F. X. VALADE,
Secretary.

SHERBROOKE BOARD OF EXAMINERS.

Mr. Wm. Henry Lee has obtained a second class diploma for Academies (English) ; and Mrs. Josephine H. Lee a first class English, and a second class French, diploma for Academies.

Miss Virginie Lépine has obtained a second class Elementary diploma (French) ; and Miss Ada O'Connor a first class Elementary diploma (English).—5th August, 1862.

S. A. HURD,
Secretary.

NOTICE TO TEACHERS.

The Catholic Board of Examiners of Montreal will meet on the First Tuesday in November next, at the usual place of meeting, Vitrié Street, at 9 o'clock A. M. All candidates for diplomas must come provided with a Certificate of baptism and Testimonials of good morals, as required by the Rules and Regulations of the Council of Public Instruc-

tion. The examination will be conducted according to the Programmes laid down in the said Rules and Regulations.

By Order,

F. X. VALADE.
Secretary

DONATIONS TO THE LIBRARY OF THE EDUCATIONAL DEPARTMENT.

The Superintendent acknowledges with thanks the following donations:

From Messrs. Harper & Brothers, New York. "A System of Logic;" by P. McGregor, A. M.

From Alexander Monro, Esq, Baie-Verte, New Brunswick: "New Brunswick, with a brief outline of Nova Scotia and Prince Edward Island," 1 vol.; "Sutherland's Prince Edward Island Geography," 1 vol.; *The Parish School Advocate*, 1858, 1859, 1860, 3 vols.

From Messrs. Dawson & Son: "First Book in Chemistry;" by Dr. Hooker, 1 vol.

"An English Grammar;" by G. P. Quackenbos, A. M., 1 vol.

From M. Bescherelle, Paris: *Petite Grammaire nationale ou grammaire de toutes les écoles de France et de l'Étranger*. 1 vol.

JOURNAL OF EDUCATION

MONTREAL (LOWER CANADA) SEPTEMBER, 1862.

Meeting of the Teachers' Association of the District of Bedford.

We are happy to say that the Teachers' *réunion* held on the 21st ult. at Durham Flats, was fully attended; and that the anticipations which the friends of the association had formed were fully realized on the occasion.

The meeting was called to order at 10 o'clock A. M., the President of the Association in the chair, and Mr. R. W. Lang acting as Secretary. Dr. Parmelee, Messrs. Marsh and Johnston were appointed a committee to nominate officers for the ensuing year, and the debate was opened with the following subject: *Ought there to be a systematic course of study in our Common Schools?*

This question having been ably disposed of, the next taken up was, *Whether the course of study in our Common Schools ought to be farther extended, so as to embrace other branches than those taught?*

Dr. Parmelee suggested that Sacred History and the History of Canada could be advantageously included in the course pursued in our Common Schools.

Mr. Lang would desire to see the course extended so as to make it a complete preparatory training; but if the state of education in the country did not permit this, he would, at least, endeavor to supply the wants of the masses who receive instruction in the Common Schools, by adding other branches of study. Many other members having taken part in the debate during which much valuable information was elicited—the attention of the meeting was called to the very important subject of text-books; and after a very animated conversation, it was resolved that *Lovell's Geography*, and *Sungster's Arithmetic* were works in every way fitted to supply a want that all teachers had felt, and as they enjoyed the approval of the Council of Public Instruction for Lower Canada, should be generally adopted in our schools.

Interesting remarks on *Penmanship* were listened to, and Mr. Harrington gave some illustrations on the black-board showing his system of teaching. The meeting then adjourned for luncheon.

Upon reassembling, the report of the committee appointed in the morning was read and adopted; and the following office-bearers declared duly elected for the ensuing year: Mr. J. A. McLaughlin, President; Mr. R. W. Lang, Vice-President; Mr. James Johnson, Secretary and Treasurer.

Committee of management: Mr. Hewett and Miss Mary A. Hutchinson.

An essay by Miss M. A. Hutchinson having been read, the following question was propounded: *Is there any practicable method of instituting such a competition between schools as shall stimulate them to aim at a higher standard of excellence?* It was suggested by a speaker, as a means of obtaining this very desirable end, that schools challenge one another to friendly trials of skill in certain branches to be designated beforehand, and it was thought much good would result from a competition of this kind.

A system of rewards should be adopted as incentives to scholarship and good conduct, was the next subject that presented an opportunity for a free interchange of views; and it was quite evident from many excellent and practical remarks uttered in the debate that its importance was fully appreciated by the speakers.

After the reading of an essay written by Miss Tabor, the following was submitted and debated at some length: *That in preparing pupils for matriculation especial reference, in our High Schools, should be had to the University of McGill College as a national Institution.* Dr. Gibson thought that a distinction in favor of any particular institution was unnecessary and had the appearance of setting aside the just claims of numerous colleges; he would therefore move in amendment that all the words after "be had" be struck out, and "to Canadian Institutions" substituted.

Mr. Lang approved of the wording as it stood, as he believed that, were this resolution carried out, it would give us a uniform curriculum, and if scholars were fitted for McGill University there was nothing to prevent their matriculation anywhere.

The question next inquired into was, *What should we make the basis of study?* When this was disposed of, it was moved by Mr. Lang, seconded by Dr. Parmelee and

Resolved,—That the next meetings of this Association be held at Waterloo, on the 13th and 14th of February next.

And after the customary votes of thanks had been passed the meeting adjourned.

Teachers' Diplomas.

In another column will be found an official notice of the nomination of several new Boards of Examiners, appointed in conformity with a Rule framed by the Council of Public Instruction; and we hope to announce shortly the appointment of the two remaining Boards for the Districts of Bedford and Bonaventure.

As all Boards will in future hold their regular quarterly meetings on the first Tuesdays in February, May, August and November, the coming examinations will take place on the last mentioned day; but the new Boards have it in their power to meet at an earlier date should it be deemed necessary so to do, provided due notice of such intended meeting be given in one of the newspapers published in the district.

Our readers have doubtless observed that the jurisdiction of the new Boards is very limited, while that of the old Boards has been greatly abridged and a concurrent jurisdiction created in certain cases. To obviate the necessity of constant and tedious reference to the code of rules and regulations, we have prepared and now publish a table showing at a glance the different counties in which the diplomas issued by each Board in Lower Canada, are valid for each class of institutions, *i. e.*, *Academies, Model and Elementary schools*. With the aid of this Table the validity of any diploma, with reference to a given county, may be easily determined. We earnestly desire to call the attention of every young person intending to pursue the career of a teacher to the fact that all diplomas granted by Boards of Examiners since May 4th, 1858, as well as

those to be issued in future, continue in force during a space of three years only ; while the very narrow bounds set upon the area of country within which their validity can be recognized must greatly tend to enhance the relative value of the Normal school diploma, which is not limited as to time, and, moreover, empowers its holder to teach in any part of Lower Canada. Under these circumstances the advantage of pursuing a course of study at the Normal school becomes so self-evident that comment is unnecessary.

The *Rules and Regulations* respecting Teachers' Examinations,—to which are appended *Programmes* of questions to be submitted to candidates—may be obtained at the Office of Education, the principal booksellers, and from the

Inspectors of Schools. With the assistance of these any one may easily determine the nature and extent of the knowledge required to pass a successful examination before a Board.

It is also necessary to bear in mind that henceforward the Boards of Montreal, Quebec, Three Rivers, and Sherbrooke are alone authorized to grant diplomas for Academies and Model schools. The jurisdictions of the Montreal and Quebec Boards extend respectively over one half of this section of the Province, and whenever a candidate is at liberty to choose, it is before these in preference to others that we would recommend him to present himself for examination.

TABLE SHOWING THE JURISDICTION OF BOARDS OF EXAMINERS IN EACH COUNTY.

COUNTIES.	BOARDS GRANTING DIPLOMAS FOR ELEMENTARY SCHOOLS.	BOARDS GRANTING DIPLOMAS FOR ACADEMIES AND MODEL-SCHOOLS.
Argenteuil.....	Montreal.....	Montreal.
Arihabaska.....	Montreal—Quebec—Three-Rivers.....	Montreal—Quebec—Three-Rivers.
Assomption, L ²	Montreal.....	Montreal.
Bagot.....	Id.....	Id.
Beauce.....	Quebec—Ste. Marie de la Beauce..	Quebec.
Beauharnois.....	Montreal.....	Montreal.
Bellechasse.....	Quebec.....	Quebec.
Berthier.....	Montreal.....	Montreal.
Bonaventure.....	Quebec—Gaspé—New-Carlisle.....	Quebec.
Brome.....	Montreal—Sherbrooke—Stanstead—Sweetsburg & Waterloo.	Montreal—Sherbrooke.
Chambly.....	Montreal.....	Montreal.
Champlain.....	Montreal—Quebec—Three-Rivers.....	Montreal—Quebec—Three-Rivers.
Charlevoix.....	Quebec—Chicoutimi.....	Quebec.
Châteauguay.....	Montreal.....	Montreal.
Chicoutimi.....	Quebec—Chicoutimi.....	Quebec.
Compton.....	Montreal—Sherbrooke—Stanstead.....	Montreal—Sherbrooke.
Two Mountains.....	Montreal.....	Montreal.
Dorchester.....	Quebec.....	Quebec.
Drummond.....	Montreal—Quebec—Three-Rivers—Richmond.....	Montreal—Quebec—Three-Rivers.
Gaspé.....	Quebec—Gaspé—New-Carlisle.....	Quebec.
Hochelaga.....	Montreal.....	Montreal.
Huntingdon.....	Id.....	Id.
Hyacinthe, St.....	Id.....	Id.
Iberville.....	Id.....	Id.
Islet, L ²	Quebec.....	Quebec.
Jacques-Cartier.....	Montreal.....	Montreal.
Johns, St.....	Id.....	Id.
Joliette.....	Id.....	Id.
Kamouraska.....	Quebec—Kamouraska.....	Quebec.
Laprairie.....	Montreal.....	Montreal.
Laval.....	Id.....	Id.
Lévis.....	Quebec.....	Quebec.
Lotbinière.....	Id.....	Id.
Maskinongé.....	Montreal—Quebec—Three-Rivers.....	Montreal—Quebec—Three-Rivers.
Maurice, St.....	Id. Id. Id.....	Id. Id. Id.
Mégantic.....	Id. Id. Id.....	Id. Id. Id.
Missisquoi.....	Montreal—Sherbrooke—Stanstead—Sweetsburg & Waterloo.	Montreal—Sherbrooke.
Montcalm.....	Montreal.....	Montreal.
Montmagny.....	Quebec.....	Quebec.
Montmorency.....	Id.....	Id.
Napierville.....	Montreal.....	Montreal.
Nicolet.....	Montreal—Quebec—Three-Rivers.....	Montreal—Quebec—Three-Rivers.
Ottawa.....	Montreal—Ottawa.....	Montreal.
Pontiac.....	Montreal—Ottawa—Pontiac.....	Id.
Portneuf.....	Quebec.....	Quebec.
Quebec.....	Id.....	Id.
Richelieu.....	Montreal.....	Montreal.
Richmond.....	Montreal—Sherbrooke—Stanstead—Richmond.....	Montreal—Sherbrooke.
Rimouski.....	Quebec—Kamouraska—Rimouski.....	Quebec.
Rouville.....	Montreal.....	Montreal.
Saguenay.....	Quebec—Chicoutimi.....	Quebec.
Shefford.....	Montreal—Sherbrooke—Stanstead—Sweetsburg & Waterloo.	Montreal—Sherbrooke.
Soulanges.....	Montreal.....	Montreal.
Stanstead.....	Montreal—Sherbrooke—Stanstead.....	Montreal—Sherbrooke.
Temiscouata.....	Quebec—Kamouraska.....	Quebec.
Terrebonne.....	Montreal.....	Montreal.
Vaudreuil.....	Id.....	Id.
Verchères.....	Id.....	Id.
Wolfe.....	Montreal—Sherbrooke—Stanstead—Richmond.....	Montreal—Sherbrooke.
Yamaska.....	Montreal.....	Montreal.

Eighteenth Conference of the Teachers' Association in connection with the Jacques Cartier Normal School.

At this meeting, held on the 29th August last, the Hon. P. J. O. Chauveau, Superintendent of Education, Messrs. Grondin and Valade, School Inspectors, Mr. Desplaines, President, and twenty members of the Association were present.

The minutes of the last meeting having been read and adopted, the election of officers for the ensuing year was proceeded with, and resulted as follows:—Mr. François X. Desplaines, President; Mr. François X. Hélu, Vice-President; Mr. G. T. Dostaler, Secretary; Mr. M. D. Boudrias, Treasurer; and Messrs. T. Amyreault, J. Duquette, J. C. Guilbault, P. H. St. Hilaire, A. Lamy, D. Lefebvre, U. E. Martineau, P. V. Maucotel and J. Ringnette, Committee of Management.

Mr. Maucotel gave the only lecture delivered at this meeting, —subject: "The progress successively made by France in the sciences from the conquest of Gaul by the Romans, and the influence of the clergy on French civilization."

Mr. Chauveau then addressed the teachers, suggesting among other things, the propriety of subscribing to the *Journal of Education*, not only because that periodical contained much new and valuable matter not to be found in the *Journal de l'Instruction Publique*, but because it would also give them an opportunity of making use of their English acquirements in a practical and agreeable manner, thus preserving them from decay.

The discussion which had been commenced at the last meeting was now re-opened by Inspector Valade and Messrs. Archambault and Boudrias, and summed up by the President, who pointed out that a combination of the three methods, *Simultaneous*, *Mutual*, and *Individual*, was to be preferred—an opinion in which he was supported by the meeting.

The following motions were next proposed and adopted:

Mr. Archambault moved, seconded by Mr. J. C. Guilbault,—That the thanks of the meeting are due to the Superintendent of Education and to Inspectors Grondin and Valade for the advice they had given and for the punctuality with which they attended these Conferences.

Mr. Duquette moved, seconded by Mr. Archambault,—That thanks be voted to the out-going members of the Committee of Management.

Mr. Boudrias moved, seconded by Mr. P. H. St. Hilaire,—That the meeting be adjourned to the last Friday in January next, at 10 A. M.

The question, *Whether, in teaching, the synthetic or analytic method was preferable?* was changed into the following: *What are the best methods of teaching?*

International Courtesies and Historical Reminiscences.

It is with much pleasure that we feel called upon to advert to two recent events, almost trivial in themselves, but deriving much importance from the fact that they tend directly to renew and cement that *entente cordiale* with our bellicose neighbors across the frontier, which had temporarily suffered in consequence of the unfortunate complications of last winter. The first of these events was the opening of the railway between Watertown, Rome and Ogdenburgh, celebrated by a grand "jubilee" at Ogdenburgh, and a pleasure trip to Ottawa—that place being the terminus of a Canadian railway connecting with the new line at Prescott. The reception by the citizens of Ottawa was warm and enthusiastic, and worthy the hospitality of the future capital of Canada. A banquet, presided over by the Mayor, was tendered the guests at the hall of the *Canadian Institute*, where many excellent speeches were made and friendly sentiments reciprocated.

The other incident to which we have alluded was the presence of the Hon. Thomas D'Arcy McGee at the literary celebration given by the Maine Historical Society at Fort Poplar, Maine. Mr. McGee was called upon to respond to the following toast, which together with the speech, we copy from the *Portland Advertiser*:—

"The memory of *Sieur de Champlain*, the fearless navigator and accomplished statesman; the first to explore and designate these shores; whose plans of Empire, more vast and sagacious than any of his time, failed of success, only through the shortsightedness of his sovereign, in allowing the Atlantic shores of

New England, to fall into the hands of his rivals, thereby changing the history of the New World."

The Hon. Thos. D'Arcy McGee, President of the Executive Council of Canada, addressed the assemblage in response to this sentiment. He said: I beg to assure you, Mr. President, and gentlemen of the Maine Historical Society, who have done me the honor to invite me here, that I feel it a very great privilege to be a spectator and a participant in the instructive retributive ceremonial of this day. This peninsula of Sabino must become, if it is not already, classic ground, and this 29th of August, the true era of the establishment of our language and race on this continent, one of the most cherished *fasti* of the English speaking people of North America. It is, on general grounds, an occasion hardly less interesting to the colonies still English, than to the citizens of Maine, and, therefore, I beg to repeat in your presence, the gratification I feel in being allowed to join in the first, of what I trust will prove, but the first of an interminable series of such celebrations. I would be very insensible, Sir, to the character in which I have been so cordially presented to this assembly, if I did not personally acknowledge it; and I should be, I conceive, unworthy of the position I happen to occupy as a member of the Canadian government, if I did not feel still more the honor you have paid to Canada, in the remembrance you have made of her first Governor and Captain General, the *Sieur de Champlain*. That celebrated person was in truth, not only in point of time, but in the comprehension of his views, the audacity of his projects, and the celebrity of his individual career, the first statesman of Canada; and no one pretending to the character of a Canadian statesman could feel otherwise than honored, gratified, when Champlain's name is invoked, publicly or privately, in his presence. We have no fear that the reputation of our great Founder will not stand the severest test of historical research; we have no fear that his true greatness will dwindle by comparison with the rest of the Atlantic leaders—the chiefs of the renowned sea—chivalry, of whom we have already heard such eloquent mention. We Canadians ardently desire that he should be better known—be well known—and perhaps, you, Mr. President, will permit me, to indicate some of the traits in the career, to point to some of the traits in the character, which halo for us, forever, the name and memory of the *Sieur de Champlain*. What we esteem most in the life of our Founder, is that chief virtue of all eminent men—his indomitable fortitude; and next to that we revere the amazing versatility and resources of the man. Originally a naval officer, he had voyaged to the West Indies and to Mexico, and had written a memoir, lately discovered at Dieppe, and edited both in France and England, advocating among other things the artificial connexion of the Atlantic and Pacific oceans. From the quarterdeck we trace him to the counting rooms of the merchants of Rouen and Saint Malo, who first entrusted him in 1603, with the command of a commercial enterprise of which Canada was the field. From the service of the merchants of Rouen, Dieppe, and Saint Malo, we trace him to the service of his Sovereign—Henry IV. For several successive years we find his flag glancing at all points along this rockbound coast on which we are now assembled, from Port Royal to Massachusetts bay. Whenever we do not find it here, we may be certain it has advanced into the interior, that it is unfurled at Quebec, at Montreal, or towards the sources of the Hudson and the Mohawk. We will find that this versatile sailor has become in time a founder of cities, a negotiator of treaties with barbarous tribes, an author, a discoverer. As a discoverer, he was the first European to ascend the Richelieu, which he named after the patron of his latter years—the all-powerful Cardinal. He was the first to traverse that beautiful lake, now altogether your own, which makes his name so familiar to Americans, he was the first to ascend our great central river, the Ottawa, as far north as Nipissing, and he was the first to discover what he very justly calls "the fresh-water sea" of lake Ontario. His place, as an American discoverer is, therefore, amongst the first; while his claims as a colonizer rest on the firm foundation of Montreal and Quebec, and his project—extraordinary for the age—of uniting the Atlantic with the Pacific by artificial channels of communication. As a legislator, we have not yet recovered, if we ever shall, the ordinances he is known to have promulgated; but as an author we have his narrative of transactions in New France, his voyage to Mexico, his treatise on navigation, and some other papers. As a diplomat, we have the Franco-Indian alliances, which he founded and which lasted a hundred and fifty years on this continent, and which exercised so powerful an influence, not only on American but on European affairs. To him also it was mainly owing that Canada, Acadia, and Cape Breton were reclaimed by, and restored to France, under the treaty of Saint Germain-en-Laye, in 1632. As to the moral qualities, our Founder was brave

almost to rashness. He would cast himself with a single European follower in the midst of savage enemies, and more than once his life was endangered by the excess of his confidence and his courage. He was eminently social in his habits—as his order of *le bon temps*—in which every man of his associates was for one day host to all his comrades, and commanded in turn in those agreeable encounters of which we have just had a slight skirmish here. He was sanguine as became an adventurer, and self-denying as became a hero. He served under DeMonts, who for a time succeeded to his honors and office, as cheerful as he had ever acted for himself, and in the end he made a friend of his rival. He encountered, as Columbus and many others had done, mutiny and assassination in his own disaffected followers, but he triumphed over the bad passions of men as completely as he triumphed over the ocean and the wilderness. He touched the extremes of human experience among diverse characters and nations. At one time he sketched plans of civilized aggrandisement for Henry IV. and Richelieu; at another he planned schemes of wild warfare with Huron chiefs and Algonquin braves. He united in a more rare degree, the faculties of action and reflection, and like all reflective minds, his thoughts, long cherished in secret, ran often into the mould of maxims, and some of them would now form the fittest possible inscriptions to engrave his monument. When the merchants of Quebec grumbled at the cost of fortifying that place, he said:—"It is best not to obey the passions of men; they are but for a season; it is our duty to regard the future." With all his love of good fellowship and society, he was, what seems to some inconsistent with it, sincerely and enthusiastically religious; among his maxims are these two—that "the salvation of one soul is of more value than the conquest of an empire," and, that "kings ought not to think of extending their authority over idolatrous nations, except for the purpose of subjecting them to Jesus Christ." Such, Mr. President, are, in brief, the attributes of the man you have chosen to honor, and I leave it for this company to say, whether in all that constitutes true greatness the first Governor and Captain General of Canada, need fear comparison with any of the illustrious brotherhood who projected and founded our North American States. Count over all the honored names; enumerate their chief actions; let each community assign to its own his meed of eloquent and reverent remembrance; but among them from the North to South, there will be no secondary place assigned to the Sieur de Champlain. Mr. President, your Excellency has added to the sentiment in honor of Champlain, an allusion and an inference as to the different results of the French and English Colonial policy, on which you will probably expect me to offer an observation or two before re-uming my seat. Champlain's project originally was, no doubt, to make this Atlantic coast the basis of French power in the New World. His government claimed the continent down to the 40th parallel, which as you know intersects Pennsylvania, Ohio and Illinois, while the English claimed up to the 45th, which intersects Nova Scotia and Canada. Within these five degrees of latitude the pretensions of France were long zealously maintained in diplomacy, but were never practically asserted, except in the 44th and 45th, by colonization. I am not prepared to dispute the inference that the practical abandonment, by France, of the coast discoveries of her early navigators, South of 45, may have changed, as you say, 'the destiny of the New World.' It may be so; it may be, also, that we have not reached the point of time in which to speak positively as to the permanent result; for Divine Providence moves in His orbit by long and insensible curves, of which even the clearest sighted men can discern, in their time, but a very limited section. But we know, as of the past, that the French power, in the reign of Louis XIII. and XIV. was practically based on the St. Lawrence, with a Southern aspect, rather than on the Atlantic, with a Western aspect.

All the consequences of that great change of plan and policy, I am not prepared here so much as to allude to, for that would carry me where I have no wish to go—into international issues, not yet exhausted. I may be permitted, however, to question that French influence, as developed in its Roman Catholic religion, its Roman laws and its historical fascinations, was ever really circumscribed to Canada, or was really extinguished, as has been universally assumed, by the fall of Quebec. It is amazing to find in the colonial records of the period between the death of Champlain and the death of Montcalm, a century and a quarter, how important a part that handful of secluded French colonists played in North American affairs. In 1629, Champlain could have carried off all his colonists in 'a single ship;' more than a hundred years later, they were estimated at some 65,000 souls; in the Seven Year War they were, according to Mr. Bancroft, but as 'one to fourteen,' of the English colonists. The part played by the Canadians in war,

under the French Kings, was out of all proportion to their number; it was a glorious but prodigal part; it left their country exposed to periodical scarcity, without wealth, without commerce, without political liberty. They were ruled by a policy strictly martial to the very last, and though Richelieu, Colbert, de la Gallissonnière, and other supreme minds, saw, in their 'New France,' great commercial capabilities, the prevailing policy, especially under Louis XIV. and XV., was to make and keep Canada, a mere military colony. It is instructive to find a man of such high intelligence as Montcalm justifying that policy in his despatches to the President de Mole, on the very eve of the surrender of Quebec. The Canadians, in his opinion, ought not to be allowed to manufacture, lest they should become unmanageable, like the English colonists, but, on the contrary, they should be kept to martial exercises, that they might subserve the interests of France, in her transatlantic wars with England. Such was the policy which felt at Quebec with its last French Governor and Captain General, and it is a policy I need hardly say, which no intelligent Canadian now looks back to with any other feelings than those of regret and disapprobation. A hundred years have elapsed since the international contest to which you refer, was consummated at Quebec, and Canada to-day, under the mild and equitable sway of her fourth English sovereign, has to point to trophies of peaceful progress, not less glorious, and far more serviceable, than any achieved by our predecessors who were subject to the French Kings. The French speaking population, which from 1608 till 1760, had not reached 100,000, from 1750 to 1860, has multiplied to 880,000. Upper Canada, a wilderness as Champlain found it and Montcalm left it, has a population exceeding Massachusetts, of as fine a yeomanry as ever stirred the soil of the earth. If French Canada points with justifiable pride to its ancient battle-field, English Canada points with no less pleasure to its newly reclaimed harvest fields; if the old *regime* is typified by the strong walls of Quebec, the monument of the new era may be seen in the great bridge which spans the St. Lawrence within view of the city I represent, and whose four and twenty piers may each stand for one hour sacred to every traveller who steams through its sounding tube, on his way from the Atlantic to the far West.

In conclusion, Mr. President, allow me again to assure you that I have listened with great pleasure to the speeches of this day—especially to the address of my old and long-esteemed friend (Hon. Mr. Poor). I trust the sentiments uttered here, at the mouth of the Kennebec, in Maine, will go home to England, and show our English relatives that the American people, unmoved by any selfish motive, are capable of doing full and entire justice to the best qualities of the English character. I am sure nothing was farther from your minds than to turn this historical commemoration to any political account— and certainly I could not have done myself the pleasure of being here, if I had imagined any such intention— but after all the angry taunts which have been lately exchanged between England and America, I cannot but think this solemn acknowledgment of national affiliation, made on so memorable a spot as Fort Popham, and made in so cordial a spirit, must have a healing and a happy effect. We have been sitting under your authority, Mr. President, in the High Court of Prosperity—we have summoned our ancestors from their ancient graves—we have dealt out praise and blame among them—I trust without violence to truth or injustice to the Dead: for the dead have their rights as the living have: injustice to them is one of the worst forms of all injustice—and undue praise to the undeserving, is the worst injustice to the virtuous and meritorious actors in the great events of former ages. When we leave this place, we shall descend from the meditative world of the Past to mingle in the active world of the Present, where each man must bear his part and defend his post. Let me say for myself, Mr. President, and I think I may add, I speak in this respect the general settled sentiment of my countrymen of Canada, when I say that in the extraordinary circumstances which have arisen for you, and for us also, in North America, there is no other feeling in Canada, than a feeling of deep and sincere sympathy and friendliness towards the United States. As men loyal to our own institutions, we honor loyalty everywhere; as freemen we are interested in all free States; as neighbors we are especially interested in your peace, prosperity and welfare. We are all anxious to exchange everything with you except injustice and misrepresentation; that is a species of commerce, which—even when followed by the fourth estate (pointing to the reporters at his right)—I trust we will alike discourage, even to the verge of prohibition. Not only as a Canadian, but as one who was originally an emigrant to these shores as an Irishman, with many of my original countrymen resident among you, I shall never cease to pray that this kindred people may always

find in the future, as they always have found in the past, brave men to led them in battle, wise men to guide them in council, and eloquent men like my honorable friend yonder (Hon. John A. Poor,) to celebrate their exploits and their wisdom from generation to generation.

Notices of Books and Publications.

CANADA EAST AT THE INTERNATIONAL EXPOSITION; By H. Miles, Esq., M. A., 8vo., 68 pp.; London.

This is a large pamphlet published by Mr. Miles, one of the Professors at Lennoxville University, who is now in England as one of the Commissioners from Canada to the Exhibition. It includes a catalogue of all articles contained in the Canadian department, with a list of rewards obtained by Canadians and a great deal of valuable information concerning Canada East, and more particularly that part of the country known as the "Eastern Townships." There are added two maps, one of Lower Canada and the other of the section of the country above referred to, numerous wood-cuts, portraits, views of buildings, &c. Educational intelligence occupies a large space, and we have to thank the author for a very kind mention of the Department of Public Instruction, and of this periodical.

SIX MILLE LIEUES A TOUTE VAPEUR; By Maurice Sand.—1 vol., 18mo., 371 pp. Published by Michel Levy, Paris. Sold for 3 francs.

A high degree of speed is always attended by a corresponding degree of risk. If M. Maurice Sand can congratulate himself upon having successfully travelled 18,000 miles at full steam, those who have perused the extracts from his notes in our newspapers cannot accuse him of similar success in all his remarkably fast performances. Still his work is written in the spirit of kindness and sympathy, and though many may think that Prince Napoleon could have secured the services of a more serious writer to chronicle the events of his visit to the ancient colony of France, all will admit that more could not have been expected from one who plumes himself upon carrying *full steam*. The style, however, is charming and this mode of treating the subject will doubtless secure a host of readers who would not have followed the author through a more appreciative work.

MÉMOIRE SUR L'UNIVERSITÉ LAVAL, AVEC PIÈCES JUSTIFICATIVES.—1 vol. 4to, iviii, 59 pp. Cote & Cie. Publishers: Quebec.

This volume contains an account of the founding of the University, with the correspondence which took place on the subject between the directors of the several Catholic Colleges of Lower Canada, and the founders of this institution. The *Mémoire* was published at the time that the establishment of another Catholic University at Montreal was in contemplation, but the project, it would seem, has either been abandoned or indefinitely postponed. To the historians who shall undertake to review the rise and progress of public education in Lower Canada this *Mémoire* will furnish very valuable information.

LE VERGER CANADIEN; By the abbé Provencher.—1 vol., 12mo, 152 pp. Darveau, Publisher; Quebec.

Rev. Mr. Provencher is known as the author of an essay upon the insects destructive to wheat, also of an elementary treatise on Botany; and we are informed he has now in the press a new work on the Flora of Canada. The little book now under notice is illustrated with numerous wood-cuts, and will prove very useful to the arboriculturist.

LES SOIRÉES CANADIENNES; Parts 7, 8, 9 and 10, for the year 1862.

These four parts which come to us bound under the same cover, contain the end of Mr. Gérin-Lajoie's pleasing and well written story, begun in a former number.

NOUVELLE NOTE SUR LES ANTIQUITES ABORIGÈNES TROUVÉES A MONTRÉAL.—Pamphlet form 8vo., 12 pp. Illustrated. Senécal, Publisher; Montreal.

This is the continuation of Prof. Dawson's articles published in the *Canadian Naturalist*, which were translated for the *Journal de l'Instruction Publique*.

LETTERS FROM CANADA, with numerous illustrations. Tenth edition, 12mo, 56 pp.

AGRICULTURAL REVIEW.—The last number of this interesting periodical contains several articles on the Great Exhibition in London, which the editor has visited for the special benefit of his

readers. By the courtesy of Mr. Perrault we are enabled to reproduce a description of the steam plough, with illustrations.

A SYSTEM OF LOGIC, comprising a Discussion of the various means of acquiring and retaining Knowledge, and avoiding Error. By P. McGiegor, A. M.—1 vol., 8vo; N., 469 pp. Published by Harper & Bros., New York, 1862.

We can conceive of few objects that may be pursued with greater advantage than the study of a science of universal and constant application. Logic is not confined to the discipline of the intellect, but analysing and exposing those subtleties which often mislead the uninformed, it exhibits in life-like colors the errors and prejudices entering so largely into the source of every-day amusement or annoyance, and gives at the same time the key to their detection. Relieved of those pedantic forms which detract so much from the investigation of mental science, the above little treatise must prove exceedingly inviting to the general reader, while the student will find its scope ample and complete. To teachers, the easy yet clear and forcible style of the author will commend itself.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

—His Lordship the Right Rev. Dr. Fulford, Anglican Bishop of Montreal, and Metropolitan, being about to leave on a long visit to England, has been replaced as a Member of the Council of Public Instruction for Lower Canada by the Rev. Canon Leach, D. C. L., Vice-Principal of McGill College, as will appear in our official notices.

—His Lordship the Right Rev. J. Lynch, R. C. Bishop of Toronto, has recently been appointed a Member of the Council of Public Instruction for Upper Canada.

—The following is a condensed account of the proceedings of the Teachers' Association of Upper Canada, which met in Hamilton, on the 5th and 6th inst.—The second annual convention of the Teachers' Association of Upper Canada, was organized by Arch. McCallum, Esq., head-master of the Hamilton Central School, 1st Vice-President of the Association, in the absence of the President, the Rev. Dr. McCaul. There was a very respectable attendance of teachers, including a few lady teachers. The number of members present during the afternoon was between seventy and eighty. The Secretary, Mr. J. W. Acres, head-master of the Paris Grammar School, read the minutes of the last annual meeting, which were approved and adopted. New members were then proposed, and thirty having paid the sum of \$1, and signed the constitution, were admitted members of the association.—Mr. McCallum read an essay on "School Rewards and Punishments." The essayist discussed the subject with much ability, enforcing his views with an abundant display of illustrations and anecdotes. He strongly inculcated the principle that the law of kindness should be carried out in schools to its fullest practicable extent. He considered that corporal punishment should only be resorted to in the last extremity, when milder means failed. After a spirited debate of some hours, in which many speakers took part, the meeting adjourned.

Evening meeting.—A public meeting of the Association was held in the Mechanics' Hall, at eight o'clock p.m., for the purpose of listening to an address by Prof. Wilson, LL.D., of University College, Toronto. Besides the members of the Association, many of the citizen of Hamilton were present to hear the address of the learned Professor, who was accompanied on the platform by the Mayor of Hamilton and the officers of the Association. Mr. McCallum, the 1st Vice-President, having taken the chair, briefly stated the objects of the Association, as set forth in its constitution, and went on to say that in those objects the whole public were deeply interested. He claimed for the teachers of Canada, that, as educators of its people, they were the prime conservators of its public weal. As its teachers multiplied in numbers, and fulfilled well and faithfully all the duties devolving upon them, so would our country take high rank among the nations of the earth. If teachers and schools were not multiplied, goals and gaolers would be multiplied. The cheapest and wisest course was to have the whole of our rising generation well educated, for the statistics of our penitentiaries and goals showed that among the inmates were included a very much larger proportion of those who could not read or write, than of those who were scholars. He believed that just in proportion as knowledge was increased, crime in many of its forms would disappear. (Applause.) He had now much pleasure in calling upon the Mayor, Mr. McElroy, who had kindly given them his presence, to address the meeting.—The Mayor said he had not expected that it would be necessary for him to make a speech. He would only say that he was very happy to meet the Teachers' Association that evening, they were a class who ought to receive the sympathy and support of the whole community, because with them rested, to a great extent, the forming of the minds of the youth of the country. He

trusted they would so discharge the duty entrusted to them, as not only to communicate the elements of ordinary education, but to instil into the minds of the youth of Canada the principles of morality and true patriotism. (Applause.) The Chairman then said he had much pleasure in introducing the gentleman who had kindly consented to deliver the annual address to the Association, Prof. Wilson, of University College, Toronto.—On motion of Mr. Acres, seconded by Mr. Henderson, a cordial vote of thanks was passed to Prof. Wilson, for his able and instructive address. A vote of thanks was also passed to the Mayor, on motion of Mr. McKee, of Kingston, seconded by Mr. McGann, and the meeting separated.

Second Day (Aug. 6th.)—The convention again met. Mr. McCallum in the chair. The proceedings were opened with prayer. A number of new members were proposed and admitted. Prof. Wilson was proposed and admitted as an honorary member.—Mr. Alexander, of Newmarket, read an essay on "The duties of Teachers in relation to their professional brethren." He shewed the benefits which teachers might derive from associating together, visiting each others' schools, and profiting by each other's experience. He thought much good would result from their meeting in this Provincial Association, by their stimulating each other and comparing notes as to difficulties in the profession, how they arose, and the best means to be adopted for their removal. He recommended, as tending to the same end, the formation of County and Township Associations.—On motion of Mr. Moore, seconded by Mr. Irwin, a vote of thanks was passed to Mr. Alexander for his able essay.—Mr. Anderson, of Paris, moved: "That our secretary be instructed to invite the attention of the Chief Superintendent of Education to the necessity of providing greater facilities for school visiting on the part of teachers, requesting that not less than four days in the year may be placed at their disposal for that purpose, the particular days to be determined by the teachers and their employers." The resolution passed unanimously.

Mr. W. Carlyle, of Hamilton, seconded by Mr. Anderson, of London, moved: "That whereas certain Boards of School Trustees are assuming the duty of subjecting teachers applying to them for situations, to a competitive examination, notwithstanding that these teachers hold certificates of qualification from County Boards of Instruction, the Provincial Normal School, or other legal authority,—we, as an association of teachers, cannot regard with respect any member of this association who submits to such an examination: and that we as an association would remind all qualified teachers throughout the Province, that they, as educated gentlemen, have a dignity of character to maintain which is sacrificed by submitting to such unauthorized examination."—After a short discussion, the resolution was carried with but three dissentients.

When the Convention re-assembled in the afternoon, Mr. Anderson, of Paris, read an essay entitled, "Suggestions towards Improvement in Common School Superintendencies." The essayist enumerated a variety of qualifications which he considered essential in an efficient Common School Superintendent, and indicated his opinion that in many cases there was much room for the improvement of that class of educational functionaries.—The thanks of the Association were voted to Mr. Anderson for his able instructive essay.

Mr. McGann moved, "That this Association, having a deep interest in the preservation and continued efficiency of the Common School system of Upper Canada, feels called upon to declare its opinion that the appropriation of the Common School funds to the support of schools connected with the various denominations, would be fraught with great danger to the educational interests of the Province." In supporting the resolution, Mr. McGann said the introduction of these denominational schools in the way proposed, would be fatal to the system. They were calculated to enshrine in the hearts of the rising generation sectarian and intolerant bigotry. While in Ireland, he had taught in connection with the Church Education Society, and had submitted to sacrifice rather than teach in the National Schools, but since he came to Canada he had changed his views on this subject. If he wanted to find persons properly educated, he would look for them in the National Schools of Ireland, where children of all creeds were educated in the same school, and had the principles of brotherhood and mutual good feeling instilled into their hearts. (Applause.) Mr. Watson, Superintendent of Schools in York Township, seconded the resolution. He considered it was the interest not only of teachers, but of the whole people of the country, to keep our school system free from injury, by the farther introduction of the sectarian element.

Mr. Anderson, of Toronto, seconded by Mr. Moore, of Brantford, moved: "That this Association considers the provisions of the present School Act, in reference to the examination of teachers and the granting of certificates of qualification by County Boards of Public Instruction, have a tendency to lower the professional status of teachers, and retard the progress of Common School education in the Province, by subjecting that large class of teachers not holding Provincial Normal School certificates to repeated and unnecessary examinations, and that it is highly desirable that a Central Board of Examiners be appointed, with power, after due examination, to grant certificates of equal extent and duration with those granted by the Chief Superintendent of Education to students who have attended the Provincial Normal School." Mr. Anderson explained the nature of the present system. Teachers who had not attended the Normal School were required to stand repeated examinations, without any object in view that he could discover. In the third-class, certificates were granted for one year only, and for a single

township or even section. In the second class, they were granted for two years. In the first-class, teachers had to come back at the end of five years to undergo another examination, and receive, if successful, the highest grade of certificate, first-class A. But that was not sufficient, at the end of another five years they had to come back the third time, and if they again passed first-class A, they then received certificates for life—but certificates confined only to the single county. If the teacher went into the next county, he had to undergo a new examination, and this had to be repeated until he again underwent his third examination. But teachers who had attended the Normal School, after undergoing an examination, received first or second class certificates, but in each case for life—Miss St. Remy, of Toronto, corrected Mr. Anderson, by remarking that the Normal School second-class certificate of the lowest grade C was only for one year.—Mr. Anderson thanked the lady for putting him right, but said all the other five grades were for life. After some discussion, Mr. Rouse moved that the resolution be laid on the table.—This motion gave rise to a tie, 15 voting yea and 15 nay. The chairman voted with the nays, and the discussion proceeded.—Mr. James Carlyle, of the Model School, warmly opposed the motion. He regretted the discussion, which he said only tended to increase the jealousy between teachers trained in the Normal School and other teachers.—Mr. Acres supported the resolution—After some further discussion, the resolution was negatived by a small majority.

Mr. McFarlane, seconded by Mr. Nichol, moved: "That Messrs. McCallum, Alexander, and Anderson, be requested to place their essays in the hands of the Secretary for publication."

The following officers were elected for the ensuing year: *President*—Prof. Wilson, LL.D., University College, Toronto. *Vice-Presidents*—Mr. A. McCallum, Hamilton; J. H. Saugster, Toronto; Thos. McKee, Kingston; J. W. Acres, Paris, R. Moore, Brantford; and C. H. Lusk, Oakville. *Secretary*—Mr. W. W. Anderson, Paris. *Treasurer*—Mr. Robert Alexander, Newmarket.

A resolution was passed recommending the Board to call the next meeting of the Association to be held at Kingston, on the first Wednesday in August, 1863. The Convention then separated.—(Abridged from the *Globe*.)

—Elementary education is at present receiving a large share of public attention throughout Europe, and among other governments that of France has long been occupied with important schemes for the development and perfection of its national system. By a decree of the 19th April last, the salary of every teacher who shall have served five years in the elementary schools, is to be increased to 700 fr.; while a certain proportion ($\frac{1}{20}$ th) of those who shall have taught from 10 to 15 years will receive a gratuity that shall make their incomes 800 to 900 fr.

As there are interested in this measure at least 17,000 teachers, many of whom will derive benefit from its provisions as soon as they shall take effect, it was only natural that innumerable addresses, conveying expressions of joy and gratitude, should have poured into the Office of the Minister of Public Instruction from all parts of France. Such acknowledgements amply proved that the benevolent action which had called forth their expression alleviated wants having an actual existence; and that this improvement, so inconsiderable in appearance, was not without its relative importance. Nor would this measure involve any additional charge upon the finances of the State, as by insisting upon the regular attendance of all children of school age and securing the assistance of communes and families generally, elementary education had been rendered self-supporting.

As it was not possible, at the date of the decree, to introduce so many changes into the budgets of the numerous communes and departments, it was decided that the new order of things should not be inaugurated until the 1st January 1863. But such sums as may be set apart for this augmentation during the present year, together with other savings, are to be applied by the Minister of Public Instruction to the purposes of primary education, in pursuance of the system of improvements commenced in 1861. Accordingly 100,000 francs have been already distributed among the female teachers in elementary schools who were in receipt of salaries under 400 fr. It is much to be regretted that this was not made the minimum salary to be paid the very deserving female teachers of the girls' schools of communes, as many among them possess means so scanty that it is only by zealous efforts and great privations they have succeeded in overcoming the difficulties which beset their path. The government seized the present opportunity of coming to their relief also, thus giving a fresh proof of its solicitude for the welfare of the teacher. The sum of 60,500 fr. has also been distributed among the superannuated and infirm teachers, who do not enjoy a pension; this of course is in addition to the regular item of 100,000 fr., annually paid out in small sums of 25 and 50 fr. The school libraries received 100,000 fr. for the purchase of books. These little libraries, which are placed under the special care of the teachers, do good service, not only for the teachers and their pupils, but also for the people generally, among whom the books are allowed to circulate. For the encouragement of the authors of useful books, the Minister of Public Instruction had only 30,000 fr. at his disposal, yet it will easily be understood that even this small sum has been of great utility. Sixty thousand volumes were acquired, and the books, chosen with the utmost care, are supplied as soon as a library is organized. The sum of 540,000 fr. has been devoted to the building of houses for the elementary schools

in the poorest localities, by which liberality on the part of the government neat school-houses will be erected in 100 communes. The Associations established by teachers for their mutual assistance received a grant of \$900 fr. as a mark of sympathy with the object they have in view.

— *School Globes*—This invention consists in mounting two hemispheres in armed standards, which slide in parallel places toward or from each other in such a manner that on separating them the several parts or lines marked on their inner and outer surfaces retain their relative position opposite to each other. It consists further in the arrangement of a primary pedestal provided with a series of screw sockets in combination with a screw shank projecting from the lower end of the head, in which the armed standards of the hemispheres slide, in such a manner that one or more globes can be placed on the primary pedestal or taken from the same and returned to their original pedestals at pleasure. It consists also in combining with the sliding armed standards, slotted swivel socket in such a manner that the globe can be turned freely in either direction. John R. Agnew, of Mercersburg, Pa., is the patentee of this invention.—*Scientific American*.

SCIENTIFIC INTELLIGENCE.

— Everyone who has used an air-pump has noticed the clouds of vapor which form in the receiver after a few strokes of the piston, and which arise from the air yielding up a portion of its moisture as the pressure is diminished. If these vapours are viewed by light transmitted from a candle, prismatic colours will appear; but to insure a distinct and fine halo Mr. Slack recommends the following plan: Place a large receiver on the principal plate of an air-pump, and a small one, holding about a quarter as much as the former, on the smaller plate. Turn the stopcock so that when the pumps are worked the small receiver only shall be exhausted, the large one remaining full. When a vacuum has been made, place a taper on one side of the large receiver, and stand on the other, keeping the eye on a level with its light, and suffering no other illumination in the room. Now, suddenly turn the stopcock so that a portion of the air from the large receiver shall rush to the exhausted smaller one. At this moment a splendid halo will appear, and it is an interesting and by no means an easy task to notice the exact order in which the colours are exhibited. The average decision arrived at in one set of experiments was as follows: A yellow light seemed to rush from a circumference to a centre, forming a luminous disk, which passed instantly to a red-orange hue, and then to a brilliant emerald-green. At this point the green central disk appeared to expand outwardly and take the form of an external ring, the centre resuming an orange tint. The changes in the phenomenon are exceedingly rapid, and their duration so infinite that it is impossible to note and describe all the chromatic effects, among which some rich purple rings will be observed, before the luminous circles disappear. Those who wish to perform the experiment with an air-pump that has only a single plate should connect its receiver by a pipe and stopcock with a larger closed vessel full of air, and then proceed in the manner described. A large amount of light is injurious to the results, as it overpowers the coloured rays. If the experiment were performed on a large scale it would probably be effective in a lecture-room.

Under ordinary circumstances there is enough moisture in the air to give rise to pleasing effects; but they will become more striking if a few drops of water are sprinkled on the inner surface of the large receiver. It is also interesting to notice the variations that occur if alcohol or liquid ammonia be substituted for the water. In the latter case, the clouds formed are denser and less transient.—*Intellectual Observer*.

— Sir John Herschel has devised an elegant mode of illustrating the action of minute refracting spheres. He mounts the spores of the common puff-ball in a film of oil between two pieces of glass. When these are held close to the eye, and a candle viewed through them, beautiful concentric halos appear.—*Ibid*.

— In a valuable treatise on the vegetable productions of Norway, which has been published by Dr Mueller, in connection with the Norwegian department of the Exhibition, some extraordinary facts are related respecting the influence of the long duration of light, during the summer months, on the growth of vegetables in the higher latitudes in Norway. At seventy degrees N. it was found that ordinary peas grew at the rate of three and a half English inches in twenty-four hours for many days in summer, and that some of the cereals also grew as much as two and a half inches in the same time. Not only is the rapidity of growth affected by the constant presence of light, but those vegetable secretions which owe their existence to the influence of actinic force on the leaves, are also produced in far greater quantity than in more southern climates; hence the colouring matter and pigment cells are found in much greater quantity, and the tint of the coloured parts of vegetables is consequently deeper. The same remark applies to the flavouring and odoriferous matters, so that the fruits of the north of Norway though not equal in saccharine properties, are far more intense in flavour than those of the south. (*Ibid*)

— Mr. Chalmer Miles, army surgeon at Halifax, asserts that the *Sarracenia purpurea* discovered by Sarrasin in Canada and commonly

known as the pitcher plant or side-saddle flower, is a specific for small pox. He prescribes repeated doses of a decoction of the root of this plant before the eruption has taken place. The effect will be to hasten the breaking out which will follow in a few hours, when a second portion is to be administered, and, after an interval of five or six hours, a third dose which will cause the pustules to dry up. If the disease is far advanced when the medicine is first given to the patient it will still have the effect of reducing the fever, a second dose causing the pustules to fall off without leaving a scar. Dr. Miles has forwarded some of the plants to England where their efficacy will be fully tested. He discovered the medicinal virtues of this herb from the Indians of Nova Scotia who, it is said, invariably keep it at hand dry and pounded for use.

If the small pox should make its re-appearance during the coming winter, we in Canada should not be excusable were it permitted to continue its ravages without an attempt being made to check it by means of a remedy so easily obtainable. The *Sarracenia purpurea* grows in abundance in the savannas and marshes of Canada East, and has often been found in the environs of Quebec. It would be well to secure a sufficient quantity during the present season and cause the roots to be dried. We translate the description given of it by Sarrasin and reproduced by Charlevoix; which, through the kindness of the Rev. Mr. Bois, author of an interesting pamphlet on that subject we are able farther to illustrate by a wood-cut:

"This plant is of extraordinary aspect; its root is half an inch thick and provided with fibres; from the collar several leaves are thrown out which form a kind of ruffle towards the point; these leaves are corniform (or pitcher-form), five or six inches in length and very narrow at their base, but spreading out considerably higher up. These corniform leaves, which touch the ground near the root of the plant, grow in the shape of a semi-circle throughout their length, the convex surface being underneath and the concave above; and they are also closed at the bottom and open at the top. The upper part of the leaf is more than an inch in length and two in breadth, rounded, and winged near the aperture; it is hairy on the upper surface, and being shaped somewhat like a spoon receives the rain which is collected and effectually retained in the horn shaped lower leaf. The lower or corniform part of the leaf, if indeed it can be called a leaf, is very short, the horn being open or slit down, with the edges rolled outwards in a manner that gives much firmness to the parts forming the opening. On the hollow side of the horn there is another leaf which in reality is but a continuation of the corniform leaf; it is narrow at its extremities, rounded and broad in the middle, and somewhat re-

sembles the wattles of a turkey. The stem rises from the centre of this group of corniform leaves and is about an arm's length; it is hollow, the size of a goose quill, and supports a flower of six petals, and of two forms,—five petals being disposed in a circle and supported by a flower-cup with three leaves. From the centre of this flower (which falls only when the fruit is ripe) rises the pistil, destined to become the fruit. The latter is raised on five sides and divided into as many cells that contain oblong, streaked seeds, resting upon the placenta. The placenta is but the continuation of the stem projected about one sixth of an inch beyond the fruit. Upon this projection the sixth leaf is situated; it is much thinner than those attached to the corolla which are tough, thick, of an oblong shape, and of a reddish color when the fruit is ripe. This sixth leaf forms a crest in the form of a pentagon. The entire part turned outward is convex, while that towards the fruit is concave. Each angle bears an incision 1/6 inch in depth; and the plant grows on marshy ground. The root is perennial, and acrid to the taste."

