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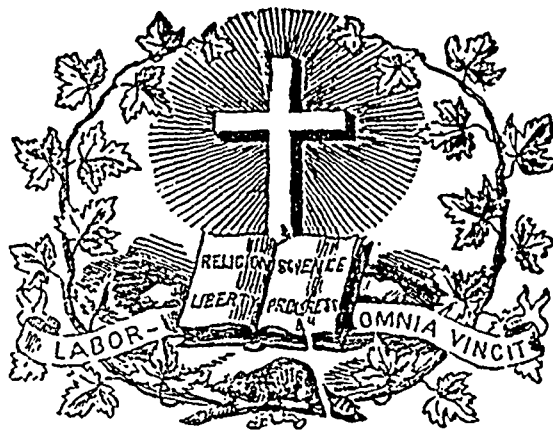
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# JOURNAL OF EDUCATION.

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**SUMMARY.**—**LITERATURE.**—Poetry: The Whispers of Time, by Mrs. Lepron.—To Autumn (Keats).—The Treasures of the Deep (Felicja Heman).—**SCIENCE:** Botany and Horticulture, a lecture, by Professor DeCandolle.—Meteorology, Past and Present.—**EDUCATION:** Educational Progress in Nova Scotia.—The Battle of Education in Holland.—On teaching Geography.—Letter from Niebuhr to his nephew, on Philological Studies.—Mary Bradley, the Deaf and Blind Mute.—**OFFICIAL NOTICES:** Appointments.—School Commissioners and Trustees.—Elections of School Municipalities.—Diplomas granted by Boards of Examiners.—**EDITORIAL:** Report of the Superintendent of Education for Lower Canada for the year 1865.—Professor Miles of Lemoxville.—Protestant Teachers' Association.—Thirtieth Meeting of the Teachers' Association in connection with Jacques Cartier Normal School.—**NOTICES OF BOOKS AND PUBLICATIONS:** *Annuaire de l'Université Laval pour l'année 1866-67.*—Mountain: A Memoir of the late Bishop of Quebec.—Bourassa: *Jacques et Marie.*—Le Canada Musical.—Civil Code.—McGoid: Synopsis of the Changes in the Law.—De Bellefeuille: *Code Civil du Bas-Canada.*—Vermorel: *The Abnakis.*—Boucher de Perthes: *Sous les Rois.*—The Journal of Education for Nova Scotia.—Denison: Fenian Raid.—Napoleon III: *Histoire de Jules César.*—*Abregé de la vie de M. Oler.*—**MONTHLY SUMMARY:** Educational Intelligence.—Neurological Intelligence.—Scientific Intelligence.—Miscellaneous Intelligence.

## LITERATURE.

### POETRY.

(Written for the *Journal of Education*.)

#### THE WHISPERS OF TIME.

BY MRS. LEPRON.

What does Time whisper youth gay and light  
Whilst thinning thy locks, silken and bright,  
Whilst paling thy soft cheek's rosenate dye,  
Dimming the light of thy flashing eye,  
Stealing thy bloom and freshness away—  
Is he not hinting at death—decay?

Man in the wane of thy stately prime,  
Hear'st thou the silent warnings of Time?  
Look at thy brow ploughed by anxious care,  
The silver hue of thy once dark hair;—  
What brook thy honours, thy treasures bright,  
When Time tells of coming gloom and night?

Sad Age dost thou note thy strength how spent,  
How slow thy footstep—thy form how bent;  
Yet on looking back how short doth seem  
The checkered course of thy life's brief dream;  
Time daily weakening each link and tie,  
Doth whisper how soon thou art to die.

O what a weary world were ours  
With that thought to cloud our brightest hours,  
Did not we know that beyond the skies,  
A land of beauty and promise lies,  
Where blissful—blessed—we will love—adore—  
E'en when time itself shall be no more.

### TO AUTUMN.

Season of mists and mellow fruitfulness!  
Close bosom-friend of the maturing sun;  
Conspiring with him how to load and bless  
With fruit the vines that round the thatch-eaves run  
To bend with apples the mossed cottage-trees,  
And fill all fruit with ripeness to the core;  
To swell the gourd and plump the hazel-shells  
With a sweet kernel; to set budding more,  
And still more, later flowers for the bees,  
Until they think warm days will never cease,  
For Summer has o'erbrimmed their clammy cells

Who hath not seen thee oft amid thy store?  
Sometimes, whoever seeks abroad may find  
Thee sitting careless on a granary floor,  
Thy hair soft-lifted by the winnowing wind;  
Or on a half-reaped furrow sound asleep,  
Drowsed with the fume of peppies, while thy hook  
Spares the next swath and all its twined flowers;  
And sometime like a gleaner thou dost keep  
Steady thy laden head across a brook;  
Or by a cider-press, with patient look,  
Thou watchest the last oozings, hours by hours.

Where are the songs of Spring? Ay, where are they?  
Think not of them, thou hast thy music too,  
While barred clouds bloom the soft-dying day,  
And touch the stubble-plains with rosy hue;  
Then in a wailful choir the small gnats mourn  
Among the river shallows, borne aloft  
Or sinking as the light wind lives or dies;  
And full-grown lambs loud bleat from hilly bourn;  
Hedge-crickets sing; and now with treble soft  
The redbreast whistles from a garden croft,  
And gathering swallows twitter in the skies.

JOHN KEATS (1).

### THE TREASURES OF THE DEEP.

What hidest thou in thy treasure caves and cells,  
Thou hollow-sounding and mysterious main?  
Pale glistening pearls, and rainbow-coloured shells  
Bright things which gleam unrecked of, and in vain.  
Keep, keep thy riches, melancholy sea!  
We ask not such from thee.

(1) Keats, one of the greatest of young poets, was educated as a surgeon's apprentice. In 1817 he published a volume of poems, the most of which had been written before he attained the age of twenty. In the following year he published *Endymion*, a Poetic Romance, and in 1820 *Lamia*, *Isabella*, *Hyperion*, *The Eve of St. Agnes*, and other poems.

Yet more, the depths have more! What wealth untold,  
Far down, and shining through their stillness lies!  
Thou hast the starry gems, the burning gold,  
Won from ten thousand royal Argosies.—  
Sweep o'er thy spoils, thou wild and wrathful main!  
Earth claims not these again.

Yet more, the depths have more! Thy waves have rolled  
Above the cities of a world gone by!  
Sand hath filled up the palaces of old,  
Sea-weed o'ergrown the halls of revelry.—  
Dash o'er them, ocean! in thy scornful play:  
Man yields them to decay.

Yet more! the billows and the depths have more!  
High hearts and brave are gathered to thy breast!  
They hear not now the booming waters roar,  
The battle-thunders will not break their rest.—  
Keep thy red gold and gems, thou stormy grave!  
Give back the true and brave.

Give back the lost and lovely!—those for whom  
The place was kept at board and hearth so long,  
The prayer went up through midnight's breathless gloom,  
And the vain yearning woke 'midst festal song!  
Hold fast thy buried isles, thy towers o'erthrown—  
But all is not thine own.

To thee the love of woman hath gone down,  
Dark flow thy tides o'er manhood's noble head,  
O'er youth's bright locks, and beauty's flowery crown:  
Yet must thou hear a voice—Restore the dead!  
Earth shall reclaim her precious things from thee!—  
Restore the dead, thou sea!

FELICIA HEMANS (1).

## SCIENCE.

### Botany and Horticulture.

ADDRESS OF PROF. DE CANDOLLE TO THE RECENT BOTANICAL  
CONGRESS IN LONDON. (2)

In order to derive the full advantage from a meeting of so many lovers of science, horticulturists and botanists, brought together from all parts of Europe, it is necessary that the common object for which they have met should be perfectly understood.

It devolves on me, who am called upon to preside (an honor of which I feel myself unworthy), to point out the bond which unites us, and of which perhaps you have at present but a vague, and, so to speak, an intuitive perception.

In my opinion, we are not here merely as amateurs to satisfy our curiosity. The proof of which is, we are here assembled to listen to discussions, instead of wandering about the fairy-like garden of the Exhibition. Evidently we seek something more than a mere flower show, and that something is, in my opinion, instruction. It is not sufficient for horticulturists merely to see—they must also study and reflect; neither is it sufficient for botanists to observe details minutely; they must also see the plants on a large scale and in grouped masses. The connection of practice with theory, and of art with science, is acknowledged to be indispensable; and in accordance with this prevalent opinion we here affirm, by our presence in this room, the necessary union of botany and horticulture. The aim of my brief

(1) Felicia Dorothea Browne was the daughter of a Liverpool merchant who, having met with reverses in business, removed with his family to Wales. She published her first volume of poems at the early age of fifteen. In her eighteenth year she was married to Captain Hemans, from whom she was separated six years afterwards. Mrs. Hemans spent the rest of her life in Wales and in Dublin, where she died, leaving a young family. Her larger works are *The Septic*, *The Vespers of Palermo*, a tragedy, *The Forest Sanctuary*, and *Records of Woman*; but her lyrics are the most popular of her productions.

(2) The first meeting of the Botanical Congress was held in the Raphael Room of the South Kensington Museum, on Wednesday, May 23, at 11 A. M., Prof. DeCandolle in the chair. A very large meeting, including almost all the British and foreign botanists and horticulturists present in London, were assembled to hear the President's address.

observations will be to call to mind how they aid each other, and to show how much more they might do so. If I am not mistaken, it will follow from the facts to which I shall allude, that our united efforts, scientific or practical, modest though they appear, contribute to increase the well-being of man, in all conditions and in all countries.

1. *The advantages of Horticulture to Botany.*—Let us first mention the services that horticulture renders, or may render, to botany. Without being myself a horticulturist, I affirm or recognize them willingly, the advancement of science rendering it necessary to have recourse to all its collateral branches.

We no longer live in those times of illusion, when botanists merely occupied themselves with European plants, or with a few from the East, and, from a spirit of caution rather than from ignorance, pictured to themselves all distant countries as possessing much of the same general vegetation, with a few uncommon or exceptional species. A century of discovery has made known the extreme variety in the floras, the restricted limits of many species, and the complicated entanglement of their geographical distribution. To see all the different forms of vegetation of the world, would be to realize in a degree the history of the Wandering Jew; besides, with this constant travelling, where would be the opportunities for that reflection or study which create true science?

The traveller is too much exhausted in warm countries, too distracted in those temperate regions favorable to active life, and his faculties are too much benumbed in the colder regions, to enable him to devote himself to minute researches with the lens or the microscope, or even to sketch or properly describe that which he has gathered. He sees, in passing, a crowd of things, but he can scarcely ever stop to enter into details, especially of those that present themselves in rapid succession. Rarely can he see the fruit and flower of a species at the same time, and it is quite impossible for him to study their complete development during the whole year. The notes taken by the most intelligent naturalist are so affected by these fatal circumstances, that it is seldom they add anything to that which a dried specimen can teach the sedentary botanist.

It is horticulture, then, which brings before us a multitude of exotic plants in a condition best adapted for study. Thanks to the variety of species it accumulates and successfully cultivates, the botanist can investigate the most difficult questions, and pursue his researches in families whose genera are not indigenous in Europe. In the herbarium, more minute observations can be made than is generally supposed; nevertheless, for certain researches, it is absolutely necessary to have the living plant, particularly for those relating to the relative disposition, the origin and development of the several organs, as well as for studying the curious phenomena of fertilization, the movements and direction of the stem, leaves, and parts of the flowers. Horticulture has done much to advance the progress of physiological botany, but it still has much to do. The most remarkable experiments of physiologists—viz., those of Hales, DuRoi, Knight—have been made in gardens. Also the long series of experiments of the younger Gaertner, and, more recently, of M. Naudin, on hybridization, which relate to the cardinal subject of the species. As much may be said of the numerous trials which are made, in horticultural establishments, to obtain new races or varieties. These have a great scientific importance, and it is undoubtedly the horticulturists who are the teachers of botanists on these subjects.

It appears to me, however, gardens can be made still more useful in carrying out physiological researches. For instance, there is much yet to be learned on the mode of action of heat, light, and electricity upon vegetation. I pointed out many of these deficiencies in 1855, in my "Géographie Botanique Raisonnée." (1) Ten years later Mr. Julius Sachs, in his recently published and valuable work on physiological botany, (2) remarks much the same deficiencies, notwithstanding that some progress has been made in these matters. The evil consists in this, that when it is desired to observe the action of temperature, either fixed or varied, mean or extreme, or the effect of light, it is exceedingly difficult, and sometimes impossible, when observations are made in the usual manner, to eliminate the effects of the constant variations of heat and light. In the laboratory it is possible to operate under more exactly defined conditions, but they are rarely sufficiently persistent; and the observer is led into error by growing plants in too contracted a space, either in tubes or bell-glasses. This last objection is apparent when it is wished to ascertain the influence of the gases diffused in the atmosphere around plants, or that of the plants themselves upon the atmosphere.

(1) Pages 46, 49, 57, and 1346.

(2) *Handbuch der Experimental-physiologie der Pflanzen*, 1 vol. in 8vo, Leipzig, 1865.

Place plants under a receiver, and they are no longer in a natural condition; leave them in the open air, and the winds and currents, produced at each moment of the day by the temperature, disperse the gaseous bodies in the atmosphere. Every one is aware of the numerous discussions concerning the more or less pernicious influence of the gases given off from certain manufactories. The ruin now of a manufacturer, now of a horticulturist, may result from the declaration of an expert; hence it is incumbent on scientific men not to pronounce on these delicate questions without substantial proof.

With a view to these researches, of which I merely point out the general nature, but which are immensely varied in details, I lately put this question (1)—“Could not experimental greenhouses be built, in which the temperature might be regulated for a prolonged time, and be either fixed, constant, or variable, according to the wish of the observer?” My question passed unnoticed in a voluminous work where, in truth, it was but an accessory. I renew it now in the presence of an assembly admirably qualified to solve it. I should like, were it possible, to have a greenhouse placed in some large horticultural establishment or botanic garden, under the direction of some ingenious and accurate physiologist, and adapted to experiments on vegetable physiology; and this is, within a little, my idea of such a construction:—

The building should be sheltered from all external variations of temperature; to effect which I imagine it should be in a great measure below the level of the ground. I would have it built of thick brickwork, in the form of a vault. The upper convexity, which would rise above the ground, should have two openings—one exposed to the south, the other to the north—in order to receive the direct rays of the sun, or diffused light. These apertures should each be closed by two very transparent glass windows, hermetically fixed. Besides which, there should be, on the outside, means of excluding the light, in order to obtain complete darkness, and to diminish the influence of the variations of temperature when light was not required. By sinking it in the ground, by the thickness of its walls, and by the covering of its exterior surfaces with straw, mats, &c., the same fixed degree of temperature could be obtained as in a cellar. The vaulted building should have an underground communication with a chamber containing the heating and the electrical apparatus. The entrance into the experimental hothouse should be through a passage closed by a series of successive doors. The temperature should be regulated by metallic conductors, heated or cooled at a distance. Engineers have already devised means by which the temperature of a room, acting on a valve, regulates the entry or exit of a certain amount of air, so that the heat regulates itself. (2) Use could be made of such an apparatus when necessary.

Obviously, with a hothouse thus constructed, the growth of plants could be followed from their germination to the ripening of their seeds, under the influence of a temperature and an amount of light perfectly definite in intensity. It could then be ascertained how heat acts during the successive phases from sowing to germination, from germination to flowering, and from this on to the ripening of the seed. For different species various curves could be constructed to express the action of heat on each function, and of which there are already some in illustration of the most simple phenomena, such as germination, (3) the growth of stems, and the course of the sap in the interior of certain cells. (1) We should be able to fix a great number of those minima and maxima of temperature which limit physiological phenomena. Indeed, a question more complicated might be investigated, toward the solution of which science has already made some advances, namely, that of the action of variable temperatures; and it might be seen if, as appears to be the case, these temperatures are sometimes beneficial, at other times injurious, according to the species, the function investigated, and the range of temperature. The action of light on vegetation has given rise to the most ingenious experiments. Unfortunately, these experiments have sometimes ended in contradictory and uncertain results. The best

(1) *Géographie Botanique*, 1855, pp. 49 and 1346.

(2) See the electrical apparatus of M. Carbonnier, exhibited at Chiswick in 1837, figured in the “*Flore des Serres et Jardins*,” vol. xii, Miscell. p. 184.

(3) Germination under different degrees of constant heat, by Alph. de Candolle, in the “*Bibliothèque Universelle de Genève*” (*Archives des Sciences*), Nov. 1865.

(4) If the curves had not been constructed, the data for their construction are, at least, dispersed throughout our books. I will cite, for instance, the growth of a scape of *Dasyliion*, as observed by M. Ed. Morren (*Belgique Hortic.*, 1865, p. 322). The figures there given are not favorable to the accepted notion, that the growth of tissues is more active by night than by day.

ascertained facts are, the importance of sunlight for green coloring, the decomposition of carbonic acid gas by the foliage, and certain phenomena relating to the direction or position of stems and leaves. There remains much yet to learn upon the effect of diffused light, the combination of time and light, and the relative importance of light and heat. Does a prolonged light of several days or weeks, such as occurs in the polar regions, produce in exhalation of oxygen, and in the fixing of green matter, as much effect as the light distributed from 12 to 12 hours, as at the equator? No one knows. In this case, as for temperature, curves should be constructed, showing the increasing or diminishing action of light on the performance of each function; and as the electric light resembles that of the sun, we could in our experimental hothouse submit vegetation to a continued light. (1)

A building such as I propose would allow of light being passed through colored glasses or colored solutions, and so prove the effect of the different visible or invisible rays which enter into the composition of sunlight. For the sake of exactness nothing is superior to the decomposition of the luminous rays by a prism, and the fixing the rays by means of a heliostat. Nevertheless, a judicious selection of coloring matters, and a logical method of performing our experiments, will lead to good results. I will give as proof, that the recent most careful experiments concerning the action of various rays upon the production of oxygen by leaves and upon the production of the green coloring matter, have only confirmed the discoveries made in 1836, without either prism or heliostat, by Professor Daubeny, (2) from which it appears that the most luminous rays have the most power, next to them the hottest rays, and lastly those called chemical.

Dr. Gardner in 1843, Mr. Draper immediately after, and Dr. C. M. Guillemin in 1857, (3) corroborated by means of the prism and the heliostat the discovery of Dr. Daubeny, which negated the opinions prevalent since the time of Senebier and Tessier, and which were the result of erroneous (4) experiments. It was difficult to believe that the most refrangible rays—violet for instance, which acts the most on metallic bodies—as in photometrical operations, should be precisely those which have least effect in decomposing the carbonic acid gas in plants, and have the least effect over the green matter in leaves. Notwithstanding the confirmation of all the experiments made by Dr. Daubeny, when repeated by numerous physicists and by more accurate methods, the old opinions, appearing more probable, still influenced many minds, (5) till Mr. Julius Sachs, in a series of very important experiments, again affirmed the truth. (6) It is really the yellow and orange rays that have the most power, and the blue and violet rays the least, in the phenomena of vegetable chemistry; contrary to that which occurs in mineral chemistry, at least in the case of chlorid of silver. The least refrangible rays, such as orange and yellow, have also the twofold and contrary property, such as

(1) The apparatus which produces the most persistent and vivid light is the magneto-electric machine, based on the development of induction by magnetism, as discovered by the illustrious Faraday. The galvanic pile is replaced by a steam-engine of low power, which sets in motion a wheel furnished with magnets (*Bibl. Univ. de Genève Archives Scientif.* 1861, vol. 2, p. 169). The working of this machine is expensive, but, unfortunately, the magnets are very costly. This system has already been applied to two lighthouses,—that at the South Foreland, and to that of the “*Société l'Allanc*,” at Havre—in consequence of the experiments of MM. E. Becquerel and Tresca.

(2) Daubeny, *Philos. Trans.*, 1836, part 1.

(3) Dr. Gardner, *Edinb. Phil. Mag.*, 1844, extract in French in *La Biblioth. Univ. de Genève*, February, 1844; Draper, *Edinb. Phil. Mag.*, September, 1844, extract ib., 1844, vol. 117; Guillemin (C. M.), *Ann. Sci. Nat.*, 1857, ser. 4, vol. vii, p. 154.

(4) Senebier, *Mém. Phys. et Chim.*, ii, p. 69; Tessier, *Mém. Acad. Sci.*, 1783; Gilby, *Ann. de Chimie*, 1821, xvii; Succow *Commentatio de lucis effectibus chemis*, in 4to, Jena 1823, p. 61; Zantedeschi, cited by Dutrochet, *Compt. Rend. Acad. Sci.*, 1844, ser. 1, p. 853.

(5) As a proof of the persistence of the old opinion, I will quote a phrase of Professor Tyndall's, in his most clear and interesting treatise “*On Radiation*,” (London, 1865), p. 6:—“In consequence of their chemical energy, these ultra-violet rays are of the utmost importance to the organic world.” I do not know whether the author had in view an influence of the chemical rays over the animal kingdom: but, according to certain passages of Mr. Sachs, I doubt if they have more power over animals than they have over plants; besides, Professor Tyndall did not concern himself with these questions; he was content to explain admirably the physical nature of the various rays.

(6) The researches of Mr. Sachs first appeared in the *Botanische Zeitung*: they are collected and condensed in the remarkable volume called *Handbuch der Physiologischen Botanik*, vol. iv, Leipzig, 1863, pp. 1 to 46.

pertains also to white light, and which produces the green coloring matter of leaves or bleaches them, according to its intensity. It is these, also, which change the coloring matter of flowers when it has been dissolved in water or alcohol. (1) Those rays called chemical, such as violet, and the invisible rays beyond violet, according to recent experiments, confirmatory of those of ancient authors—those of Sebastian Poggioli, in 1817, (2) and of C. M. Guillemin—have but one single well-ascertained effect, that of favoring the bending of the stem toward the quarter from which they come more decidedly than do other rays; yet that is an effect perhaps more negative than positive, if the flexure proceeds, as many still believe, from what is going on on the side least exposed to the light. (3)

The effect upon vegetation of the non-visible calorific rays at the other extremity of the spectrum have been but little studied. According to the experiments we have on this subject, they would appear to have but little power over any of the functions; but it would be worth while to investigate further the calorific regions of the spectrum by employing Dr. Tyndall's process, that is, by means of iodine dissolved in bisulphid of carbon, which permits no trace of visible light to pass.

How interesting it would be to make all these laboratory experiments on a large scale! Instead of looking into small cases, or into a small apparatus held in the hand, and in which the plants cannot be well seen, the observer would himself be inside the apparatus, and could arrange the plants as desired. He might observe several species at the same time, plants of all habits, climbing plants, sensitive plants, those with colored foliage, as well as ordinary plants. The experiment might be prolonged as long as desirable, and, probably, unlooked-for results would occur as to the form or color of the organs, particularly of the leaves.

Permit me to recall on this subject an experiment made in 1853 by Professor Von Martius. (4) It will interest horticulturists now that plants with colored foliage become more and more fashionable. Prof. Von Martius placed some plants of *Amaranthus tricolor* for two months under glasses of various colors. Under the yellow glass the varied tints of the leaves were all preserved. The red glass rather impeded the development of the leaves, and produced at the base of the limb yellow instead of green; in the middle of the upper surface, yellow instead of reddish-brown, and below, a red spot instead of purplish-red. With the blue glasses, which allowed some green and yellow to pass, that which was red or yellow in the leaf had spread, so that there only remained a green border or edge. Under the nearly pure violet glasses the foliage became almost uniformly green. Thus, by means of colored glasses, provided they are not yellow, horticulturists may hope to obtain at least temporary effects as to the coloring of variegated foliage.

The action of electricity on foliage is so doubtful, so difficult to experiment upon, that I dare hardly mention it; but it can easily be understood how a building constructed as proposed might facilitate experiments on this subject. Respecting the action of plants on the surrounding air, and the influence of a certain composition of the atmosphere upon vegetation, there would be by these means a large field open for experiments. Nothing would be easier than to create in the experimental hothouse an atmosphere charged with noxious gas, and to ascertain the exact degree of its action by day and by night. An atmosphere of carbonic acid gas might also be created, such as is supposed to have existed in the coal period. Then it might be seen to what extent our present vegetation would take an excess of carbon from the air, and if its general existence was inconvenienced by it. Then it might be ascertained what tribes of plants could bear this condition, and what other families could not have existed, supposing that the air had formerly had a very strong proportion of carbonic acid gas.

Until horticulture can supply physiology with such convenient means of experiment, it, in the meantime, advances descriptive botany by the valuable publications it issues. The greater part of the old works with plates, such as "*Hortus Eystettensis*," "*Hortus Elthamensis*," &c.; also those of Ventenat, Cels, Redouté, &c.; the *Salicium* and *Pinetum* of the Duke of Bedford; and more recently the

"*Rhododendrons of the Himalaya*," by Dr. Hooker; the works of Bateman, Peacatore, Reichenbach fils, on Orchids; and many others I could name, would never have existed, had there not been rich amateurs either to edit or buy them.

It is horticulture that has given us the longest series of illustrated journals that have ever been published; and here I must do justice especially to the English horticulturists. No doubt the science of our time requires a larger amount of analytical details than is contained in the plates of the "*Botanical Magazine*," "*Botanical Register*," "*Andrews' Repository*," "*Loddiges' Botanical Cabinet*," "*Sweet's British Flower Garden*," "*Paxton's Magazine and Flower Garden*," and other English journals; but what a number of forms are thus fixed by the engravings in these books, and what a fund of valuable documents for consultation they afford. One must admire the "*Botanical Magazine*," commenced in 1793, continued from month to month with an exemplary regularity, and which is now at its 5580th plate. Not only has it always represented rare and new species, but it has ever been conducted on a simple and uniform plan, which renders it convenient to consult.

The series of plates is unique from the very beginning. Each plate has its number, and each article of letter-press refers only to one plate, by which means the quotations from the work are rendered brief and clear. Many editors have not understood the advantage of this simple arrangement. They have varied their titles, their series, their pagings; they have affixed to their plates numbers, then letters, then nothing at all; the end of which is (and this ought to serve as a warning for the future) that the more they have altered and complicated the form of their journals, the shorter time they have lasted.

How is it that these purely bibliographical details cause in us such sad recollections? Of the men just mentioned, who have rendered such eminent service to botany and horticulture, England has lost three during the year 1865—Sir Joseph Paxton, Dr. Lindley, and Sir William Jackson Hooker. (1) I should certainly fail in what is expected of me if I did not express, in the name of the foreigners attending this meeting, our deep regret at such serious losses. We know them all by their writings, and many among us have known personally the distinguished men I have mentioned. Their names follow us at each step in this the scene of their labors. If we admire the boldness of construction of the iron domes that characterize modern buildings, we think of the Crystal Palace, of Chatsworth, and of the humble gardener who became a great architect. If we visit the beautiful establishment at Kew, we see everywhere around us proofs of the indefatigable activity of Sir William Hooker. Lastly, if we ask the origin of the garden of the Royal Horticultural Society at Kensington, we are told it is only a development of that at Chiswick, where Lindley stood preëminent by his knowledge and his energy; and of that Society where botanists of my age found in their youth such valuable encouragement in their studies.

The names of Sir William Hooker and of Dr. Lindley, thanks to their special works, will ever remain distinguished in science. These two botanists have, moreover, been directors of horticultural journals, and of great horticultural establishments, and since their influence has been so fully acknowledged by practical men, I shall have little trouble in showing that science is as useful to horticulturists as horticulture is to botanists—and this will form the second part of my discourse.

2. *The advantage of Botany to Horticulture.*—The principles of vegetable physiology are what horticulturists and agriculturists usually study in books on botany. They do not always find direct answers to their questions; but they can draw from them certain rules, certain ways of experimentalizing and reasoning, which saves them from falling into many errors. Should some ridiculous idea be promulgated by some ignorant or charlatan, it is by an appeal to the general rules of physiology that a practical man may at once reject them, or, at least, hold them in distrust. On the contrary, innovations, if in harmony with the principles, may be, and I will even say ought to be, readily accepted.

Do not let us put too much faith in the lucky results of experiments made absolutely by chance. It is with some of these experiments as with dreams and presentiments—if they come true once in a thousand times they are talked about, otherwise they are passed over and forgotten. Besides, it must be said, men nearly always are guided by theories; but the theories of the ignorant are often absurd and without foundation, while those of educated men are based on probabilities, or on an accumulation of facts.

(1) Since these lines were in the printer's hands, British science has sustained a severe loss in the death of the truly amiable and learned Professor W. H. Harvey, of Dublin, so well known by his works on *Alga*, and on the botany of South Africa. I cannot refrain from expressing our sense of this great bereavement.

(1) Sir John Herschell, *Edinb. Phil. Journ.*, January, 1843.

(2) S Poggioli, *Opuscoli Scientifici*, quoted by Dutochet, *Compt. Rend. Acad. Sci.*, 1844, sem. 1, p. 850

(3) The rather confused and questionable explanations, founded on the notions of Dutochet, of the existence of a deoxydizing power on the brightest side, clash with the fact that the blue, indigo, and violet rays, the least powerful for deoxydizing tissues, are the most powerful in causing them to bend.

(4) "*Gelehrte Anzeige*," München, Dec. 5, 1853.

Conjointly with physiology, botanical geography shows the distribution of plants all over the globe, their struggle with the elements, their migrations, and already raises a portion of the veil which covers the obscurity of their origin. All this ought to offer a real interest to horticulturists. We are beginning to have the power of expressing in figures the effect of each climate upon vegetation; consequently, the possibility of a given species enduring the mean or extreme climatal conditions of that country to which it is desired to introduce it. Already we can show, in the clearest manner, the analogy between the vegetation and climate of certain regions, widely separated the one from the other, and point out in which cases new attempts at cultivation should be tried or where they should be discouraged. A celebrated geologist was able to say, beforehand, there is gold in such a part of New Holland; and gold was found there. We can also say, the olive tree and the cork oak will succeed in Australia; the eastern and temperate region of the United States is favorable to the growth of Chinese plants, more particularly to that of tea; and we can assert that that part of America included between San Francisco and the Oregon territory will, one day, supply wines as varied and as excellent as those European ones produced between Portugal and the Rhine.

It is a singular fact, that the two principal beverages of the civilized world, wine and tea, which produce similar stimulating effects, but which to a certain extent are the substitutes one for the other in different countries, present also in the mode of cultivating them the most marked resemblances and differences. The vine and the tea-plant succeed best on stony, barren hill-sides, of which they sometimes increase the value a hundred-fold. According to the exposure, the soil, the cultivation and manner of preparing the produce, wine and tea are obtained of unquestionable excellence; while the neighboring crops, but a short distance off, may be more or less ordinary in quality. The two shrubs require a temperate climate, but the vine needs heat and no rain during summer, while the tea-plant requires rain and but little summer heat; the result of which is, that these two species are almost geographically incompatible. Vine-growing countries will never produce tea, and *vice versa*.

But you will say, these examples belong rather to agriculture, and concern neither botany nor gardens. I maintain the contrary. It is science, in the present day, which points out what plants to cultivate, and into what countries to introduce them. Horticulture makes the trial, with infinite pains. If successful, the young plants are submitted to the less refined treatment of agriculture. Before the happy introduction of Cinchonas into British and Dutch India could be effected, botanists were required to collect, distinguish, and carefully describe the various species of American Cinchonas; horticulturists were then called on to make cuttings, gather the seeds, raise the young plants, transport and establish them in another part of the world; and so at last they were passed over to the care of the agriculturists. The coffee-plant did not spread gradually from Arabia to India, from India to Java; nor was it the American colonists who brought it from its original country to their fazendas or haciendas. The shrub was first described by botanists and was afterwards introduced by the Dutch into a garden at Batavia; from thence it was taken to the Botanical Garden at Amsterdam, from whence a specimen was sent to the King of France in 1714. DeClicu, a naval officer, transplanted it from the garden at Paris to the French colonies in America. A multitude of such instances might be named. In the present day science has progressed, practical men avail themselves of it, governments and nations have abandoned those mistaken ideas in accordance with which it was supposed that a cultivation advantageous to one country was injurious to others. Hence we may hope to see, before long, useful species planted in all regions where they can thrive, to the great advantage of mankind in general.

One of the most evident effects of science has been to create in the horticultural public a taste for varied and rare forms. Formerly in gardens there were only to be found certain kinds of plants which dated back to the time of the Crusades, or even of the Romans. The discovery of the New World did not produce a change in proportion to its importance; perhaps because horticulturists did not travel enough, or acquaint themselves with those countries whose species were most suitable for cultivation in Europe. Botanists, fortunately, were more ambitious. Their collectors were numerous and daring. They enriched their herbaria with an infinitude of new forms, and published works upon exotic plants, such as those of Hernandez, Rumphius, Sloane, &c. The immense variety in the forms of plants was thenceforth recognized, and in point of taste the elegant simplicity of the primitive flowers was able to vie with the gaudiness of the double ones. Then ceased the reign of tulips and pæonies in flower gardens. Curiosity, that great incentive to all science, having penetrated horticulture, the change in gardens became rapid. Instead of a few hundred species such as were cultivated at the commence-

ment of the last century, there are now 20,000 or 30,000 to be found in most of the present catalogues. The single family of Orchids has probably more different representatives in our hothouses than was the case with all the families of plants put together, a hundred years ago. Fashion, united to the present curiosity of amateurs, causes, from time to time, old plants to be abandoned for new ones; and thus the entire vegetable kingdom will ultimately pass under the observation of civilized man.

What would horticulturists do, amidst this invasion of thousands of species, had not botanists devised convenient plans of classification and nomenclature? The families, genera, and species, have all been arranged in books, just as the districts, streets, and numbers of the houses are in our gr at capitals—with this superiority of method, that the form of the objects indicates their place—as if, in looking at a house in a town, one might discover, at a glance, to what street and what quarter it belonged. The plan of giving a single name to each species, besides its generic name, together with the prohibition of changing names without due reason, of giving the same appellation to two different species or two genera, far excels our plan of distinguishing individuals. How much it would simplify our intercourse with men, and facilitate our inquiries, if, in the whole world, the members of one family only bore the same name, and if each individual had but one christian name, differing from those of the other members of his family. Such is, nevertheless, the admirable plan of nomenclature that science has provided for horticulturists, and which they cannot too much appreciate and respect. (2)

3. *The beneficial effects of the association of Botany with Horticulture.*—The pursuit of horticulture demands books and herbaria, as that of scientific botany requires cultivated living plants. Thence the necessity, which is more and more recognized, of bringing together the materials for comparison in the same town, the same establishment, and even under the same administration, organized so as to facilitate the use of them. How many institutions in Europe, either private or public, would be benefited by this arrangement! How many towns and countries are now deficient—some in libraries, some in herbaria, some in respect to horticulture. Professional men proffer their complaint; let us hope that public opinion may end by listening to them. (1)

The bringing together the means of study, I have said, is desirable. Not less so is the interchange of ideas and impressions, both of botanists and horticulturists. Each of these classes must clearly have distinct characteristics; but the one should be influenced by the other. By these means, some too retiring dispositions may be brought out, and certain dormant powers developed. Horticulture, for instance, has a commercial tendency which may be carried too far. Charlatanism may slide in among flowers. Botany, on the contrary, is a science, and consequently rests on the investigation of pure and simple truth. A horticulturist who allows himself to be influenced by a scientific spirit necessarily frees himself from over-selfish tendencies. Natural history, on its side, by reason of the perfection of its method, its nomenclature and its minute observations, has something technical and dry about it, which contrasts with the grandeur of nature, and with the sentiment of art. It is for horticulture, combining, as it does, the planning and the decorations of gardens, to develop the æsthetic faculties of the savant, as of the world in general. A lovely flower, beautiful trees, a splendid floral exhibition, excite a sort of admiration, and even enthusiasm, similar to the effects produced by music or painting.

The powers of the German composers of modern days, and those of the Italian painters of the 16th century are justly extolled; but may it not also be said, that in point of art they are equalled in their way by the beautiful parks of old England? The feeling of harmony,

(2) Two years ago I made a request to the Fédération des Sociétés d'Horticulture Belges, which appears to have been favorably received, and it may not be useless to repeat it here. It consisted in begging the horticulturists who obtain new varieties not to give them botanical names, with a Latin designation, but merely arbitrary names of quite a different nature, in order to avoid confusion and useless researches in books. For example, if they called a *Calceolaria*, *Sebastopol*, or *Triomphe de Gand*, every one would understand it meant a garden variety; but if they named it *Lindleyi*, or *mirabilis*, one would think that it was a botanical species, and would search for it in scientific works, or in the Floras of Chili; and botanists, happening perhaps to mistake it, would add it to the end of a genus in their books as a species imperfectly known. The more horticultural names differ from Latin ones, the better it is, unless they can be appended to the scientific nomenclature: as when we say *Brassica campestris oleifera*, instead of, shortly, *Colza*.

(1) The Botanical Gardens at Kew are a fine example of what should be done, either on a larger or a more modest scale, in many towns where the means of study are yet inconvenient or incomplete.

in form and color—is it not also studied in them? The effect of contrast—is it not skilfully managed? The gradual transition from architectural to natural beauties—is it not treated in an admirable manner? Yes; decidedly the English landscape gardeners are poets; they have drawn from the same sources of inspiration as the most national writers of their country, and that source is the appreciation, so universal in England, of the beautiful, in an aspect of nature which is elegant and attractive, though somewhat grave.

Thus, gentlemen, for the development of our talents, as well as for our actual benefit, art and science keep pace together. Let us rejoice over their union, rendered conspicuous to-day by this congress of botanists, held in connection with a great floral exhibition; and after these general observations—perhaps rather too protracted—let us enter upon the consideration of those more truly scientific subjects, in which many among you are no doubt disposed to take part.

### Meteorology, Past and Present.

The most ancient records inform us that astronomy and meteorology in a rudimentary state were amongst the sciences which engaged the attention of man at a very early period.

In the book of Job, which is one of the earliest, if not the very earliest written record, we have evidence of the interest with which the ancient pastoral nations of the East contemplated the nightly march of the stars, and the more engrossing interest which they felt in varieties of weather and climate.

The effect of latitude in modifying the important element of climate was without question recognised at a very early period; nor can we doubt that some rude method of foretelling weather must have been adopted by pastoral nations, this being derived partly, perhaps, from observations of the sky, and partly from a study of the habits of animals.

But although these two sciences had a common and very remote origin, they have had a very different history. In a comparatively short space of time the laws which regulate the apparent positions of the heavenly bodies, that is to say, of the sun, the moon, the planets and the stars, became known sufficiently well to enable astronomers to foretell eclipses. The principles, too, of angular and linear subdivision, an art connected on the one hand with astronomy, and on the other with geodesy, must have arrived at great perfection at a very remote period. It was, we believe, the remark of Laplace that the ancients must have had some very exact method of measurement with which we are unacquainted, and the great Pyramid is probably a standing memorial of the knowledge of geodesy possessed by the early inhabitants of Egypt.

But this very exact knowledge of the earth's figure and size, along with a much less exact knowledge of the distribution of land and water over the surface of the earth, must be considered to embrace all the geography of the ancients. The science of terrestrial magnetism, meteorology (except the very rudiments), geology, and all those other branches of knowledge which are embraced under the head of physical geography, are of modern growth. Of these meteorology is perhaps that branch of knowledge which possesses most practical importance, but it is, at the same time, that which is least advanced. Now why is this? Why is it that this great and most important science, of equal importance with astronomy, and, as we have seen, of equal remoteness in its origin, should be so greatly behind? We have not to seek far for an answer to this question. Before any branch of knowledge is finally brought under the domain of numerical laws, three steps must be taken.

We must first of all have a proper conception regarding what elements ought to be measured, and by what instrumental means these measurements may be made. In the next place we must make a sufficient number of good observations with our instruments, when we have obtained them; having done which, we must, in the third place, endeavour to deduce from our observations the laws which regulate the science in question.

To render this clear, we may take the science of terrestrial magnetism, which in some respects is akin to meteorology. It is only of late years that Gauss, the German mathematician, proposed a method by which the elements of terrestrial magnetism at any place may be correctly measured, so that by knowing these elements we know all the particulars in which it is possible for one place to differ magnetically from another. It is of still later date that, chiefly through the exertions of General Sabine, and of those who have co-operated with him, the magnetic elements of the various parts of the globe have been ascertained—an operation which may be compared to determining the climate of a place in the kindred science of meteorology, while the laws which regulate those sudden and capricious

changes of terrestrial magnetism, and which are termed magnetic storms, have also to some extent become known.

Now, the science of meteorology is not less, but more, complex than that of magnetism; for in the former the different causes at work are many, and the complexity of their action is very great; and we need only remark that the varied distribution of land and water, of mountain and valley, which is so charming to the traveller, is exceedingly puzzling to the meteorologist. Each variety which adorns the landscape only produces in his eyes an additional entanglement in the complicated web of results which it is his office to unravel.

Let us now shortly examine the past progress and present state of the science of meteorology under the threefold aspect already introduced. First, then, as to the elements to be measured, and the instruments to be employed in their measurement. If we take the air, we ought to know its velocity and direction of motion, its pressure, its temperature, and its state with regard to moisture, electricity, and ozone. Now, if we except the barometer, by which we measure the pressure, and the thermometer, by which we estimate the temperature of the air, all the other instruments by which these various elements may be measured are of very recent date, and their construction implies considerable progress in various branches of science.

If we now take the sea, here the elements to be determined are its temperature, its specific gravity and saline constitution at various places and depths, as well as the direction and velocity of the oceanic currents by which it is traversed. This last element is a very important one, for there is a circulation of the sea, not less than of the air. It is, however, very easy to determine approximately the circulation of the air, while it is extremely difficult to determine that of the sea. An illustration will render obvious this difference. A man attached to the earth during a severe storm or hurricane must necessarily know in what direction the wind is blowing, and he is at the same time a very good judge of its force. But let the same man, during the same storm, be in a balloon, and his means of ascertaining the direction and velocity of the wind will be very much reduced. He no longer strives against the storm, but is carried passively with it, and while the dwellers on earth are struggling against its violence, everything with him is in a state of the most perfect repose, not a feather is moved, nor is the motion of the wind more felt by our aerial voyager than the annual motion of the earth by the inhabitants of our globe. In fact, a man carried along with any moving body, whether this body be the earth in its annual and diurnal revolution, or a balloon moving with the air, or a ship at sea, can only ascertain the direction and velocity of his motion by reference to some external object which he knows to be fixed. Suppose, now, that we have a ship in mid-ocean, and that the ship, as well as the body of water around her, is being carried along by an oceanic current, how is the mariner to ascertain the direction and velocity of this current? He might do so if he could cast anchor, but in mid-ocean this is evidently impossible, and in consequence he can only do it in the following manner:

By observations of the sun and stars (fixed objects), and by his chronometer, he knows his latitude and longitude, and hence his position on the earth's surface from day to day.

By throwing a log, and by his compass, he knows his motion from day to day with regard to the water around him.

Now, these two methods will only agree together in the event of the water being at rest; they will not agree together if the water is in motion; and the amount of this disagreement enables the mariner to know the direction and velocity of the motion of the water.

The remarks which we have now made will serve to convince our readers that it is not a very easy task to determine accurately all the necessary meteorological elements, whether at land or at sea. In the next place, let us consider what progress has been made in observing.

There is no doubt that, especially of late years, a great many observations, at least with the barometer, the thermometer, and the rain-gauge have been made, but unfortunately comparatively few of these have been made either with good instruments, or on a good and uniform plan, and very few have been properly reduced.

Very many soldiers have assaulted the citadel, but these have been chiefly irregulars, and each one has been content with chipping his own individual piece out of the ramparts, without much regard to what his comrades were about, and the result is, that a breach is not yet made, and the citadel has not yet surrendered.

It may be worth while entering a little more fully into the causes of the comparative want of success in this science.

In the first place, until lately there was no means by which an observer might ascertain the correctness of his barometer or thermometer. These instruments were left to the tender mercies of the optician who made them, and the inevitable result was a deplorable want of accuracy in their construction. In the next place, observers do not seem until lately to have made good observations. The observa-

tions themselves were so generally regarded as exceedingly simple, that the requisite care was not taken; it was always thought so easy to read a barometer or thermometer. The consequence was, that very often the requisite temperature correction was not applied to the reading of a barometer originally badly made, while a thermometer equally faulty was placed in a position where it could not possibly give the true temperature of the air.

No doubt, by a sufficient number of observations some knowledge of the elements of a particular place might be obtained; but there was always more or less uncertainty in comparing together observations made at different places and with different instruments. There was also an element of uncertainty in comparing together observations made at the same place and with the same instruments during a long series of years, for the constancy of the barometer could not be relied on, and the change that time produces in the two points of a thermometer was very generally overlooked. Now, an immense mass of observations of this nature, negligently made and irregularly published, if published at all, forms a not very promising collection out of which to deduce results; nor do we envy him the task who sets about gathering together the golden grains that may lie dispersed in such a mass. The observations have swollen to such an extent that the task would simply be impossible.

One defect inherent in all ordinary observations, even the best, ought here to be mentioned, and this is, that as far as weather is concerned, an observation requires to be made at the right moment. Let us say a squall comes on. Now, in order to know how this squall is travelling we ought to know at what moment the wind blows most fiercely and the barometer sinks lowest at a number of stations in the route of the squall. But in order to know this we ought to have self-registering instruments. But these are of very recent origin, and yet the instance we have just mentioned shows the paramount importance of such instruments in the science of meteorology.

And now let us mention, in few words, the practical results of all our observations. One of the most important of these is the very fair knowledge of the climate of various places which we have already obtained. A mode of graphical representation originally due to Halley, but introduced into meteorology by Humboldt, has been of service here. According to this method, we draw a line through all the various parts on the earth's surface that have any element of climate the same. Thus, an isothermal line embraces together all those places which have the same temperature, an isobaric line all those places that have the same atmospheric pressure; and so on. We have not yet, however, arrived at any precise knowledge of these secular changes that may take place after a long series of years in the climate of a country. At sea, again, thanks to Maury and others, we know the prevailing wind at different points, and also to some extent, though not completely, the course of the oceanic currents.

In the next place, with regard to the progress of certain kinds of weather, the chief extent of our information is, that at sea certain circular storms behave in a definite manner, so that we can lay down rules for the handling of a vessel that happens to be caught in one of these storms. This, and a beginning in storm-signalling made by Admiral Fitzroy and others, is nearly all we know about the subject. At this moment, as would appear from the Parliamentary Report recently published, he would be rash man who should venture to predict the kind of weather to be met with to-morrow, or foretell the character of next winter. Our readers who have followed us thus far will have perceived that the slow progress of meteorology has been due, in the first place, to difficulties inherent in the science, but, in the second place, to the want of system in the efforts made to extend our knowledge. Of late years, however, steps have been taken to remedy this latter evil.

The first of these which we shall mention is the establishment in this country by the British Association, of the Kew Observatory for verifying and improving meteorological and other instruments. By this arrangement an observer is no longer dependent upon the character of his optician for the accuracy of an instrument, but he may, if he chooses, have it sent to be verified at Kew upon the payment of a small fee. It is wonderful how quickly this system has operated in raising the character of the usual run of meteorological instruments made in this country. When a maker knows that his hand-work is liable to be examined at any moment by a competent authority, he very soon becomes more careful in the construction of his instruments. Before this system was introduced, the error of a barometer might be reckoned in tenths of an inch, now it is reckoned in thousands; a thermometer, again, might have been wrong a couple of degrees, not a couple of tenths is a large error.

The verifications of Kew Observatory are, however, not confined to meteorology, but they extend to geodetical and magnetical instruments; and, in fine, to all those instruments that may be employed in physical geography, using this word in its widest sense.

But, besides undertaking these verifications, the Kew Observatory has furthered the progress of meteorology by being the first to introduce self-recording photographic instruments; and we believe that a barograph, or self-recording barometer, now at work at the Kew Observatory, is the original instrument constructed by the well-known Francis Ronalds, once Director of that Observatory. Self-recording magnetographs have also been arranged by this Institution, and with such success that eight sets of these instruments, on the Kew plan, have been supplied to other Observatories.

The step we shall now allude to is of a more cosmopolitan nature. About the year 1852 it came to be perceived that systematic co-operation, of a kind best attained by Government measures, was necessary to the progress of the science of meteorology. It was necessary that observers should work together with good instruments and on a good system, and also that the observations should be reduced and published systematically. This conviction led to the creation of the meteorological department of the Board of Trade, as is stated in the Parliamentary Bluebook before us, page 4, in the following words:—

"In and before the year 1852, the then Lieutenant Maury, acting under the sanction of the United States Government, had, by the help of the navy and the merchant ships of the United States, been for some time collecting meteorological observations made at sea. In 1852, Sir John Burgoyne, then Inspector-General of Fortifications, contemplated the establishment of a certain number of meteorological observations on land, to be managed by the Royal Engineers, and a suggestion was at his instance made to the United States Government, that the observations so carried on, and any observations made under the direction of that Government, should be conducted on one uniform plan. To this a counter proposition was made by the United States Government, to the effect that any uniform system should include observations at sea, and that the different maritime nations of the world should be invited to make such observations on one uniform plan. This counter proposal was submitted by the British Government to the Royal Society; and it was finally determined to postpone for the present the attempt to reduce to one uniform system the various meteorological observations by land which different nations were then already making; but that it was desirable to invite the various maritime nations of the world to collect through the medium of their national and mercantile navies, certain meteorological observations at sea, to discuss these observations, and to communicate the results to one another. A conference, consisting of representatives from different maritime countries, subsequently met at Brussels, in August and September 1853. This conference reported to the effect that it would be impracticable to obtain one great desideratum, viz, uniformity of scales and instruments; but they expressed a strong opinion that steps should be taken to secure the accuracy of the instruments that might be used. The meteorological department of the Board of Trade was subsequently constituted, and the late Admiral Fitzroy was appointed as its head."

A systematic course of research was thus inaugurated, and in order to insure correctness, all the instruments used by the meteorological department in this country were verified at the Kew Observatory.

The fruits of this system were soon apparent. Maury was enabled, by making use of the logs of many vessels, to lay down the directions of the prevailing winds in various parts of the ocean, in such a manner that the passage of vessels has been materially shortened in consequence. This is of itself a very great boon, and one which our nation can thoroughly appreciate. In our country, again, the late Admiral Fitzroy latterly turned his attention to the subject of storm-warnings to the various ports—a practical point of great interest in an island so exposed as ours; and in this branch he achieved a very considerable amount of success, for which we hardly think he has got sufficient credit from the Parliamentary Committee whose report we have referred to.

The lamented death of Admiral Fitzroy, who may be said to have fallen a victim to the duties of his office, has induced Government again to consult with the Royal Society. The Royal Society on being consulted immediately recommended that self-recording meteorological instruments should be introduced into some six stations on the British Isles, of which one should form the central station, to which the records of all the others should be sent for reduction and publication. They suggested Kew Observatory as perhaps the best for the office; and when it is recollected that the employment of photography to self-recording meteorological instruments was first introduced in this Observatory, we think the selection of Kew on the part of the Royal Society was only a just tribute to its past exertions and present standing.

From what we have previously said, our readers will perceive that the employment of self-recording instruments is quite essential to the progress of meteorology, and we earnestly hope that this proposal of



the Committee will not fall to the ground from want of Government support.

In fine, a considerable extension and modification of the present system is advocated in this report, the reporters recommending that the Kew Committee should take charge of the whole branch. We shall only remark that if they are willing to do so, it could not be put into better hands.

We indeed rejoice to think that there is now a likelihood of a systematic and earnest pursuit of meteorology, under the auspices of the British Government, and especially are we glad to think self-recording instruments are likely to be established. In this respect meteorology is behind terrestrial magnetism, although the former is the more popular and immediately practical science of the two. But when a beginning has once been made by our Government, it is almost certain that it will be followed up by the Continental nations; so that possibly at no distant date Europe may be sprinkled over with observatories in each of which self-recording meteorological instruments are at work. But while we heartily agree with the conclusions arrived at by the Committee, we hardly think they have done justice to the late Admiral Fitzroy. Of his sincerity of mind and scientific earnestness there can be no question. There can be as little question that his system of storm-warnings has been of great public benefit—has, in fact, been the saving of many lives. His was the bold strong hand of a pioneer that quarried the stone—it will remain with others to rear the edifice. If in another branch of his work he wanted method, he himself was the chief sufferer. His genius and his untiring energy have conduced to the lasting benefit of his country. The faults he had have only hastened his own untimely and lamented death.—*North British Review.*

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## E D U C A T I O N

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### Educational Progress in Nova Scotia.

NEARLY two years have now elapsed since the first free school act came into operation in Nova Scotia. This measure, passed in the session of 1864, changed completely the basis of our educational system, and its introduction may therefore be properly regarded as marking an epoch in the history of public education among us. With this as a stand point, it may not be uninteresting to note a few of the prominent features and leading facts connected with the history of legislation on this question. Going back to the year 1847 we find EARL GREY sending voluminous despatches on this subject for the consideration of our Legislature. In these he strongly urged the establishment of a Normal School and of a liberal system of common schools, as matters of the greatest moment to the welfare of the people. The public men of the day felt the importance of the considerations urged upon their attention, and some changes were made in the existing provisions of the school law. Among other steps in advance, the office of Provincial Superintendent of Education was created, and in 1851 DR. DAWSON entered upon the duties of that position. In one of his first reports to the Legislature he says: "The work is greater than I can fully perform, and the deficiencies in the popular education of the country are of a most formidable character." He pressed upon the Legislature the necessity of adopting assessment as the only reliable means of supporting education, and of making the schools free to all pupils; also the immediate establishment of a normal school for the training of teachers. The educational committee of that year reported that "it would be a waste of time and scarcely respectful to the intelligence of the House if the committee were to enlarge upon the benefits that would result to the country if our whole system of education were founded upon a permanent fund, raised by assessment, under the sanction of law." The committee recommended, also, public agitation of the question, and expressed 'the earnest hope that it would be kept free of all party conflict, and be viewed solely on its own intrinsic merits.' DR. DAWSON laboured assiduously to elevate the schools of the country, and especially to enlist popular feeling in favour of what

appeared to him to be the only true basis of support,—assessment. Impatient of the apathy of the people, and weary of waiting upon the unsuccessful movements of the Legislature, after an incumbency of three years, he selected another sphere of labour, and gave to a sister Province the benefit of his talents. Then followed the division of the Province into two districts, C. D. RANDALL, Esq., M. A., was appointed Superintendent over the western district, and HUGH MUNROE, Esq., over the eastern. From 1855 to 1864, the Rev. Dr. FORRESTER filled the joint office of Principal of the Provincial Normal School and Superintendent of Education. With what enthusiasm he carried forward the labours of his predecessors, is fresh in the minds of all. The Normal College, which had been erected through the exertions of Dr. DAWSON, was immediately equipped, and the Model School established. As Principal of these, Dr. FORRESTER sought to infuse new life into the teachers of our common schools, and to elevate the business of teaching into a profession; while as Superintendent of Education he laboured to persuade both people and Parliament of the necessity of the immediate adoption of assessment as essential to such a system of schools as the well-being of the Province demanded. Neither he nor his predecessors laboured in vain. An educational spirit was kept alive, and the inherent weakness of the system they were compelled to administer was so far counterbalanced as to admit of a degree of prosperity. The people, moreover, were prepared, by an agitation extending over a period of fourteen years, for the adoption of assessment, so far as such preparation was possible apart from the actual and visible operation of the principle.

But the day on which the census of 1861 was opened, the hope of effecting the education of the people of this Province, through the agency of the system then in operation, faded instantly and forever from the minds of thoughtful men.—Every one was appalled at the spectacle of ignorance which the country presented. Out of 284,092 persons in the Province over five years of age, 81,469 could not read a printed page, and 114,877 could not write their own names. Here was overwhelming failure. And why? Not because famine, pestilence, or war, had ravaged the land, and left this as one of its fearful memorials; for every branch of industry yielded with wonted constancy a moderate if not an abundant return, and health and peace had been enjoyed by the people. It could not be that the harshness of legal constraint had chilled the generous devotion of the people to a cause so intimately connected with the prosperity of all; for each individual knew no control in this matter but his own will. Fees, subscriptions, or permissive assessments, each supplemented by provincial aid, were the prescribed modes of supporting schools. Nor can we affirm that the failure was chiefly due to the lack of general information as to the importance of education; for ten years of laborious effort had been expended in directing the attention of the people to this very point. There has been, and there can be but one adequate answer given to the question. The mode of supporting the schools was weak, uncertain, and insufficient. It was based upon the error that the maintenance of a thorough system of schools is a matter that concerns those only who have children to educate, whereas it is also truly a matter of public concern. Ignorance, in its results, is a moth consuming the wealth of every community—a leech constantly depleting the arms of industry—a vulture preying upon the very vitals of society. All suffer loss and injury by its continued existence, and all in each community ought to combine to expel it from every home.

Our public men were not slow to deduce the great lesson taught by the census of 1861, and the year 1864 witnessed the passage of the school law already referred to. It increased the grants for educational purposes, declared schools to be free, and encouraged the principle of assessment by providing a bonus of twenty-five per cent. on the provincial grant for sections adopting it. The Principal of the Normal School was relieved from the necessity of discharging the laborious duties of two offices that his undivided energies might be applied to the preparation of teachers; and the present incumbent was appointed to the office of Super-

intendent. Provision was also made for the re-division of the province into school sections, the examination and uniform classification of teachers, the regular inspection of schools; and the Executive Council was constituted a Council of Public Instruction, in order that the whole subject of public education might be brought under the immediate and constant supervision and control of the Legislature.

While this law contained much that was needed to elevate the condition of education, it did not, however, create a permanent and equitable basis of support. The school rate, being wholly local, varied extremely in different school sections. This, with the large expenditure entailed upon the majority of sections, in order to secure proper school-houses and furniture, alarmed the people in many parts of the province, and caused the entire suspension, for a time, of school operations in many sections which had previously supported schools. During the legislative session of 1865, numerous petitions on the subject were presented. A few asked that the old law be restored; but the great majority earnestly sought the re-adjustment of the mode of support, so as to equalize, as far as possible, the school rate. Not a single petition, we believe, was adverse to the principle of free schools. The Legislature amended the law by equalizing the rates. This was done by providing that a portion of the amount required from the people should be raised by a general rate over each county. The provincial grant was increased to \$90,000; and the balance required for salaries beyond that received from these two funds, was to be raised by subscription. Experience quickly demonstrated to the people that the mode of support was yet imperfect. Many would not subscribe so much as a farthing towards supplementing the general funds, and trustees found themselves unable to command the means necessary to carry on the schools. The most intelligent portions of the country murmured, not that a county assessment had been established, but that the power of local assessment had not been preserved to the majority of the rate-payers of each section. The conviction that a proper system of free schools necessitated the universal application of the principle of assessment, grew apace.

In 1866, petitions, numerous signed, again awaited the meeting of the Legislature. Nearly all of these petitions asked that the amount of the county assessment be increased to a sum equal to the provincial grant; that voluntary subscription be abolished, as being incompatible with a system of free schools, and that assessment be ordained as the mode of raising all local funds in connexion with public schools. After careful consideration the prayer of these petitions was granted. A county rate of thirty cents for each inhabitant; a provincial grant to be disbursed in fixed amounts to the several classes of teachers; and the right of a majority of rate-payers to assess the property of the residents of the section for all other necessary funds for school purposes, were established as the most equitable, safe, and efficient mode of supporting education. These amendments come into operation during the ensuing month.

A striking evidence of the superiority of a system of free schools over every other system, as an instrument adapted to effect the general diffusion of intelligence, is furnished by the attendance upon the schools of Nova Scotia since the introduction of that system. We have already referred to the alarm which, in many portions of the province, was experienced on the introduction of the law in October 1864, and the consequent closing of a large number of schools.—Many persons very naturally anticipated a large decrease in the aggregate attendance on the schools; but the contrary proved to be the fact. The excess over the previous year was, for the first term, 1,886, and for the second term, 6,225. The number of children receiving instruction has continued to increase, as is seen by the following returns for the term ended April 30 :—

| COUNTY.           | No. of Free Public Schools. |      |           |           | No. Pupils attending School. |       |           |           |
|-------------------|-----------------------------|------|-----------|-----------|------------------------------|-------|-----------|-----------|
|                   | 1865                        | 1866 | Increase. | Decrease. | 1865                         | 1866  | Increase. | Decrease. |
| Cape Breton.....  | 43                          | 61   | 18        | .....     | 1659                         | 2591  | 932       | .....     |
| Victoria.....     | 33                          | 39   | 6         | .....     | 1222                         | 1560  | 338       | .....     |
| Inverness.....    | 48                          | 62   | 14        | .....     | 1880                         | 2891  | 1011      | .....     |
| Richmond.....     | 28                          | 33   | 5         | .....     | 1222                         | 1371  | 149       | .....     |
| Guysboro'.....    | 18                          | 22   | 4         | .....     | 640                          | 1078  | 438       | .....     |
| Antigonish.....   | 39                          | 51   | 12        | .....     | 1594                         | 2046  | 452       | .....     |
| Pictou.....       | 68                          | 91   | 23        | .....     | 3652                         | 4756  | 1104      | .....     |
| Cumberland.....   | 28                          | 72   | 44        | .....     | 2083                         | 2914  | 831       | .....     |
| Colchester.....   | 51                          | 67   | 16        | .....     | 3148                         | 3506  | 358       | .....     |
| Halifax.....      | 62                          | 99   | 37        | .....     | 4550                         | 6090  | 1540      | .....     |
| Hants.....        | 44                          | 60   | 6         | .....     | 2062                         | 2477  | 415       | .....     |
| Kings.....        | 45                          | 49   | 4         | .....     | 2040                         | 2534  | 494       | .....     |
| Annapolis.....    | 32                          | 52   | 20        | .....     | 1790                         | 2433  | 643       | .....     |
| Digby.....        | 25                          | 34   | 9         | .....     | 1388                         | 1975  | 587       | .....     |
| Yarmouth.....     | 18                          | 36   | 18        | .....     | 2023                         | 1920  | .....     | 103       |
| Shelburne.....    | 20                          | 24   | 4         | .....     | 1004                         | 1314  | 310       | .....     |
| Queens.....       | 21                          | 13   | .....     | 8         | 990                          | 712   | .....     | 278       |
| Lunenburg.....    | 44                          | 51   | 7         | .....     | 2204                         | 2416  | 212       | .....     |
| Net increase..... | 667                         | 906  | 247       | 8         | 35151                        | 44584 | 9814      | 381       |

This is an increase, in the aggregate, of 9,433 over the corresponding period of last year, and of 11,319 over the same period of the previous year. This rapid and enormous increase is unparalleled in our school history, and is chiefly due to the adoption of county assessment and the freedom of school privileges.

It will be seen that much has already been accomplished towards realizing what the educational committee of the House of Assembly so earnestly desired in 1851. For sixteen years this subject has, to a greater or less degree, occupied the public mind, while the last two years of that period have witnessed decisive action on the part of the Legislature. As a result of this action, there has finally been secured an adequate system of supporting schools, and a supervision and inspection of the same. The standard of teachers' qualifications has been raised, and rendered, as far as possible, uniform throughout the province; a system of school registration, returns, and distribution of moneys, has been nearly perfected; county academies and superior schools have been established; a very large number of comfortable, and even elegant school houses have already been erected, while many old houses have been enlarged and repaired; improved school furniture has been procured, and playgrounds purchased and improved; maps, globes, and apparatus have been extensively introduced into the schools, and provision made for the permanent and cheap supply of a uniform series of school books. A series of reading books, a system of penmanship, a map of British America, and an elementary arithmetic, have been provided expressly for our schools, and in their influence for improvement it may appear that these are not among the least beneficial of the results which have been mentioned.

On the 15th day of October next, the people of Nova Scotia, for the first time in the history of the province, will be able to command a sufficient and equitable support for the proper conduct of a system of public schools. No subject of equal importance ever received from our Legislature a tardier justice; but the experience of the recent past induces us to hope that a matter of such vital importance to all will hereafter receive the attention which it demands. It now only remains for the people, one and all, heartily to combine their efforts in order that the inestimable blessings of a good common-school education may everywhere be enjoyed.—*Nova Scotia Journal of Education.*

### The Battle of Education in Holland.

Up to the commencement of the present century, Holland had no general system of popular instruction. The Catholics possessed hardly any schools, the Protestants but few, and those few very imperfect. The first impulse towards educational progress was given by a private Association, founded in 1784, whose object was to diffuse enlightenment among the lower classes by publishing good and cheap elementary books, founding public libraries, and establishing model schools. Finally it organised a committee of enquiry upon the best methods of public instruction, and in 1797 the city of Amsterdam adopted the plan of reform recommended by this Society.

In 1801 the celebrated Orientalist, Van der Palm, who was then Minister of public instruction, framed a measure which, slightly modified, became in 1806 the basis of a new organisation. The success which the law of 1806 obtained is attributed to its two main provisions; first, the establishment of a complete system of inspection for schools, and a rigorous examination for the teachers; and, secondly, the introduction of the entirely new fundamental principle of secular schools. The terms of this enactment were in effect these:—That the instruction was to be so organised as to further the acquirement of useful knowledge side by side with the development of the intellectual faculties, at the same time that the children were trained to the exercise of all the Christian virtues. That the children were not to be deprived of instruction in the dogmatic teaching of the communion to which they belonged, but that such instruction was not to be committed to the charge of the schoolmaster.

The ministers of the several religious bodies gladly accepted this condition, and the principle of secular schools was thenceforward established, under the belief that it would not only secure the cultivation of tolerance and charity, but was the only system under which dogmatic religion was likely to be adequately taught.

M. Van der Ende, the chief promoter of the law of 1806, thus describes its spirit:—"These elementary schools ought to be Christian, but neither Protestant nor Catholic. They ought to belong to no communion in particular, and to inculcate no positive dogma. The national school ought to be for the whole people."

M. Cousin, who visited these schools in 1836, found them realising this design. In this great schools at Amsterdam, Rotterdam, and the Hague, he saw Jews, Catholics, and Protestants of all denominations sitting on the same benches, and receiving the same instruction. The teaching of dogma was strictly excluded.

The law of 1806 remained in force until 1857. About this time a revision of it became necessary, in order to bring it into harmony with the constitution of 1848, which had proclaimed freedom of education. The principle of secular schools had then to sustain a violent attack. From the time that the Catholics had obtained equality of rights, they had employed their influence in endeavouring to banish religious instruction from the schools more completely than before, and they had succeeded in getting the Bible proscribed even as a reading-book. But the more completely they succeeded in enforcing a rigorous observance of the terms of the law of 1806, the greater became the uneasiness of the ultra-Protestants. Unable to contest the right of the Catholics to insist upon the instruction in a comprehensive (1) school being purely secular, they proceeded to attack the principle itself of a comprehensive school. They dubbed such schools "atheistical," "focuses of irreligion and immorality," and freely prophesied the annihilation through them of all national virtue. They excited, moreover, against the law of 1806 the fears of the Protestants, already alarmed at the fancied progress of the Roman Church. They were anxious at any price to introduce a "denominational"

system, under which each religious communion might have its special school.

In 1857 the question of the revision of the law was fully discussed by the Dutch Chambers. The debate was marked by the practical good sense of Dutchmen animated by much earnest religious feeling, and a large and liberal spirit of tolerance. It was granted that it was of the very highest importance to teach morality and religion as moving forces without which progress in civilization was impossible; but the intervention of the Church in the domain of the school was steadily resisted, and it was finally ruled that all instruction in dogma should be left to the ministers of the several communions, while the culture of the social virtues should be entrusted to the schoolmaster under the control of the civil power.

The law proposed by the Government laid it down as the duty of the schoolmaster to develop the germs of the social and *Christian* virtues. This last phrase the Catholics opposed on the ground that it might be made to authorise the introduction of religious dogma. The Protestants on the contrary were for maintaining it, as expressing the wishes of the majority in the nation. By the Jews, strange as it may seem, the presence of the word "Christian" was cordially welcomed. They saw in this provision, as it was defined by the Government, simply a design to secure the teaching of the high and pure morality which Christianity (as they said) brought with it, and which those who were not Christians could no less cordially accept, as being no other than that universal morality which appealed to every right conscience and every enlightened spirit.

The ultra-Protestant party had strongly advocated a denominational system. M. Van der Bruggen attempted to show them that divergence of religious opinion sprang chiefly from men having fundamentally different conceptions of what constituted religion. That for some Christianity meant Christian dogma, and that therefore they laid the chief stress upon articles of faith and the letter of revealed truth; but that in the minds of others Christianity was not so much a matter of the understanding, as an object of feeling and conscience. That in every Christian nation, notwithstanding the great speculative differences in opinion, there was a common basis of religious belief and moral feeling, and that it was upon this basis that secular instruction ought to build.

The liberal Protestants and the moderate Catholics united their strength, and the law was carried. Its principal provisions were as follows:—That in every electoral district elementary instruction was to be given in public schools, which should be provided in sufficient number for the wants of the population, and that children belonging to all communions were to be admitted without distinction. That the instruction was to aim at developing the social and Christian virtues. That the teachers were to abstain from teaching, doing, or permitting anything which might wound the religious sensibilities of the communions to which the children might belong. That the teaching of religion was left to be supplied by the different communions, to facilitate which the school premises were to be kept open out of school hours for the use of the pupils.

A competent judge, who has lately visited the schools of the Netherlands, reports that the methods are good, the masters devoted to their useful mission, and the results obtained eminently satisfactory, the law meeting with no serious opposition even in the Catholic provinces.

The parliament of Holland had not as yet made education compulsory, although a great number of its members have strongly advocated it. In this province of Groningen, however, one of the most enlightened in the kingdom, a compulsory enactment has been some years in force. It was noticed that in the country schools especially the number of scholars was continually diminishing, and therefore in 1839 a regulation was put in force, which obliged every father of a family to pay the usual school fee for every child between the ages of six and twelve, whether he was attending school or not, unless it could be shown that he was

(1) We use this term to denote a school which comprehends all denominations.

receiving instruction either at home or in a private school. The effect of this measure was that the number of children at school in this province increased in a few years from 20,000 to 30,000. (1)

From the returns of 1864, it appears that there were then in the Netherlands 3,608 elementary schools, of which 2,549 were public schools, and 1,059 private, or one school to every 100 of population. The total number of scholars amounted to 391,407, of whom 208,735 were boys, and 182,672 girls, or 10 scholars to every 100 of population. Rather more than a third were receiving a gratuitous education. The schools, as in America, are mixed, and it is reported that the system of educating boys and girls in the same school is found to work most satisfactorily.—*Papers for the Schoolmaster.*

### On Teaching Geography.

I propose to consider the subject of geography—as it is taught, and one way—better, it seems to me—in which it might be taught. It is true that many of the subjects of *Physical Geography* are of such a nature, that, even if not taught on strict educational principles, the child can hardly fail to gain a moderately correct idea of what he recites. But alas for the unhappy urehins just transplanted from the primary schools, who are set to learning that the earth is round—that it has two motions, the daily and the yearly,—that the former is that in which it turns on its own axis, and the latter that in which it turns round the sun,—that the former motion produces the change from day to night, and the latter the change of seasons. These must, indeed, cause sore tribulation and vexation of spirit to the poor little victims! And not only are these difficult subjects generally taught by methods wholly at variance with the principles which should guide us in all our teaching, but, with most teachers, they precede many of the simple subjects of *Physical Geography*, and all of *Political Geography*. Go into one of our normal schools and test the young ladies' comprehension of the change of seasons,—I think the result would occasion some surprise; yet they studied the subject, or rather committed to memory the words, "The change of seasons is produced by the earth's motion round the sun," before they were ten years old.

This arrangement is a flagrant violation of more than one educational principle. First, this: "Not the order of the subject, but the order of Nature." Is it in the order of nature to teach a child that the earth is constantly revolving round the sun, and that this revolution produces the change of seasons, before teaching him, for instance, that the water he sees from the window is a bay, and that the land on which Fort Independence stands is an island? Is it in the order of nature to teach him that the revolution of the earth on its axis produces the change from day to night, before teaching him that he lives on the continent of North America?

"But," some one will say, "why should he not be taught the cause of these phenomena? He certainly observes them." Very true; so he observes the phenomena of twilight, and of the rainbow: would you, then, teach him the theory of the refraction and reflection of the sun's rays? He hears music: would you teach him to account for it on the undulatory theory?

This brings me to the second principle violated: "Proceed from the simple to the more difficult." The infraction of this is manifest. Would you compel a child of eight years to lift a hundred-pound weight for the purpose of strengthening his body? Why then do you require him to lift a hundred-pound *mental* weight for the purpose of strengthening his mind? What would be the effect on the *body* in the first instance? What, then, must be the effect on the *mind* in the second?

A very forcible argument against this method occurred in one of our city schools not long since: A class,—most of whom could

recite fluently the remarks contained in their books on latitude and longitude,—being asked at what place on the earth's surface there would be no latitude, replied, almost unanimously, "At the poles." Yet most of the class were considered by the teacher well prepared. There was one exception, however, which excited my risibles to a painful degree. A little girl, being asked to give the definition of latitude, replied, "Latitude is distance from the equator neither north or south." This definition, observe, is strictly correct, with the exception of one letter; but the introduction of that one letter, unfortunately, somewhat diminishes its value.

Taking it for granted, then, that the principles of Pestalozzi are correct, it is manifest that the arrangement generally adopted in the teaching of geography is unphilosophical and irrational. Now what arrangement can be found which shall not violate any principle, and which shall, the most truly, educate the child? One, it seems to me, which shall proceed from the most simple subjects of physical geography—as being, itself, the simplest of the three branches—through the more extended subjects of political geography, taking up mathematical geography as it is needed. First would come mountains, rivers, lakes, valleys, etc.—all those subjects which may be taught by means of pictures, without reference to maps or globes. Next to these we should wish to take up the more extensive ones of oceans and continents. These, however, cannot be taught by pictures without conveying false ideas of their size, as compared with islands and lakes. A globe, then, is necessary; but before using a globe, the child must understand why it is made of a spherical shape. Here comes in the subject of the form of the earth,—then continents and oceans,—next the political divisions of the continents; but, to study these properly, the subject of their representation on maps and globes must be understood, and here comes in the subject of latitude, longitude, division by circles, &c. From this point we may go on regularly with political geography.

As to the revolution of the earth on its axis and round the sun, and the consequent change from day to night, and from winter to summer, I would leave the consideration of those subjects until such time as the mind of the child should be ready to receive them without injury. This time, with the former, would be when he had completed his eleventh year, and with the latter, not before he had completed his thirteenth or fourteenth.

To go back now to the first part of this course: How may the subject of the simpler physical divisions of the earth be scientifically taught? Take this one, for example—a lake. We will suppose the lesson—in the giving of which the principle to be borne in mind is, "Develop the idea before giving the term"—to be in the hands of a teacher who endeavors in all things to make her teaching conform to what study and reflection have told her is right. By showing a picture of a lake, she easily gets from the children that it is "a piece of water with land all round it." Writing this description of the picture on the board, she asks how the sentence may be somewhat improved. They will probably give "surrounded" in place of all round, and if they do not give "body" in place of "piece," the teacher herself gives it. Now they have the idea of a lake expressed in good language. The teacher gives the term, and one more item of knowledge is added to the children's stock;—an item acquired, not by the exercise of memory alone, but by the exercise of the perceptive faculty, of their common-sense, and by calling on their previous information. With the other subjects she proceeds in a similar manner, until she arrives at the form of the earth. This subject, usually passed rapidly over, by requiring the children to commit to memory the statement contained in their book, is one, it seems to me, which affords an unusually good opportunity for strengthening the reasoning faculties.

The children may apply knowledge gained from previous information, and may be led to form a correct opinion of the shape of the earth before any statement of the actual fact is made by the teacher. How? I will endeavor to illustrate. Holding an orange before the class, the teacher takes a short lead-pencil, a key, or any other small object which may be at hand, and placing it on

(1) A regulation to the same effect has been in force since 1530, in the province of Drenth, and in that of Ober-Yssel since 1566. Canada has lately adopted a like measure, with the greatest success.

the side opposite the class, so that just the point is visible over the convexity of the orange, asks, what part of the pencil they see. "The point," is readily given. Moving it further on, she asks, "Do you see more or less of it now?" continuing in this way till the whole of the pencil becomes visible. Next she takes some plane surface, and placing the pencil upright on it, asks how much of it can be seen—"The whole." Moving it farther on, she repeats the question. Still, "The whole." Then why," she asks, "is it that when I move it toward you on the orange, you see, first the point, gradually more and more, finally the whole, while on the slate you see the whole at once?" Because the orange is round and the slate is flat," will be soon obtained. She makes use of a few more illustrations, in each case requiring the children to account for the gradual appearance of the pencil. After firmly fixing in the minds of the children the proposition, "If we are on one side of a round body, and anything is moved toward us from the opposite side, it will come into view gradually," she develops the converse of the proposition by using any familiar illustration, drawing the idea from the children clothed in any words they may suggest.

Now she proceeds to apply these propositions to the form of earth, taking the proof of the appearance of an approaching vessel. After the gradual manner in which it comes into view has been stated, she goes back to the converse of the proposition just proved, asking, "If the ship comes gradually into view, what must be the shape of the body over which it is moving?" "Round." "And what is the body over which it is moving?" "The earth." "Then what is the shape of the earth?" The children will be forced from their previous observation to reply, "Round," but not, probably, with a very firm conviction of the truth of what they utter. The teacher, without corroborating their assertion, next places a ball so that it will cast a shadow on the floor; asks the shape of the shadow; shows by experiment that only a round body will cast a round shadow. Then she tells the class that sometimes the earth gets between the sun and the moon, just as the ball gets between the sun and the floor, and asks what would then be seen, probably, on the moon. "A shadow." "Yes, and this shadow is round. Does this," she inquires, "make you more nearly certain that you were correct in thinking the earth round?" The answer will be in the affirmative, and after allowing a few of the class to state again their reasons for holding such an opinion, the teacher corroborates it. One difficulty remains, however, viz. the 'kind' of roundness,—whether the earth be spherical or circular. To elucidate this point, the teacher holds a cent — or, better, some larger circular object — in different positions, leading the children to notice and state that sometimes the shadow cast is round and sometimes not; then leads them in a similar manner, to notice and state that, in whatever position a ball is held, it still casts a round shadow. Next, giving the information that the earth always casts a round shadow, she asks which of these objects it might be supposed to resemble in shape. "The ball."

Now the class have all the ideas necessary for a good definition; one or two well directed questions will draw out that definition, and the subject is finished. Is it not much better thus to allow the truth to dawn gradually on the minds of the children; to awaken doubts as to the correctness of their preconceived impressions on the subject of the earth's figure; by proceeding cautiously from step to step, to make these doubts deepen into conviction,—and then, and not till then, when they are awake to the subject and ready to believe, to say decidedly, "You are right,—the earth is round?"

Has there not been much more intellectual growth here, than can possibly take place in the minds of children whose firmly fixed opinions are suddenly met and rudely overthrown by the statement, on authority too high for them to doubt, "The earth is round." Probably, after gazing at it a few minutes in mute surprise, they mentally ejaculate,—at least, those who have been fortunate enough to retain any degree of originality of thought,— "Well, I suppose it is, if the book says so," and forthwith pro-

ceed to prepare for the inevitable parrot-like repetition of the fact. Is not this a step, nay, a prodigious stride, towards that much-to-be-dreaded, always-to-be-fought-against habit of mind, taking on trust, learning by rote?

After the subject of the form of the earth has been taken up, the next in order would be Continents and Oceans. The first would be easily taught, by directing one or more members of the class to point out on the globe the two largest bodies of land entirely surrounded by water, represented there; asking if there are any bodies equal to these in size. A negative answer being obtained, the children are asked for a description of what they have just observed, which will probably be given, after a little questioning, something in this wise: "A body of land, larger than any island, entirely surrounded by water." As they now have the idea, nothing is wanting to complete the lesson but the term, which is given by the teacher.

Oceans would be taught in a similar manner, and, as with this subject, the consideration of the natural features of land and water concludes, we are ready for the next subject in order — The Political Divisions of the Continents. — *Massachusetts Teacher.*

#### Letter from Barthold George Niebuhr to his nephew, on Philological Studies.

[NIEBUHR, the historian, diplomatist, and philologist, addressed the following letter, while residing at Rome as Prussian Minister, to his nephew then nineteen years of age. It is a precious manual of advice from a ripe scholar and an eminent statesman, not only on the intellectual processes of education, but on the true ideal of conduct—simplicity, energy, truthfulness—in every walk of life.]

When your dear mother wrote to me, that you showed a decided inclination for philological studies, I expressed my pleasure to her at the tidings, and begged her and your father not to cross this inclination by any plans they might form for your future life. I believe I said to her, that, as philology is the introduction to all other studies, he who pursues it in his school years with eagerness, as if it were the main business of his life, prepares himself by so doing for whatever study he may choose at the university. And besides, philology is so dear to me, that there is no other calling I would rather wish for a young man for whom I have so great an affection as for you. No pursuit is more peaceful or cheering; none gives a better security for tranquillity of heart and of conscience, by the nature of its duties, and the manner of exercising them; and how often have I lamented with sorrow that I forsook it, and entered into a more bustling life, which perhaps will not allow me to attain to any lasting quiet, even when old age is coming on! The office of a schoolmaster especially is a thoroughly honorable one; and, notwithstanding all the evils which disturb its ideal beauty, truly for a noble heart one of the happiest ways of life. It was once the course I had chosen for myself, and it might have been better had I been allowed to follow it. I know very well, that spoiled as I now am by the great sphere in which I have spent my active life, I should no longer be fitted for it; but for one whose welfare I have so truly at heart, I should wish that he might not be spoiled in the same manner, nor desire to quit the quietness and the secure narrow circle in which I, like you, passed my youth.

Your mother told me that you wanted to show me something of your writing, as a mark of your diligence, and in order that I might perceive what progress you have already made. I begged she would bid you do so, not only that I might give you and your friends a proof of the sincere interest I take in you, but also because in philology I have a tolerably clear knowledge of the end to be aimed at, and of the paths which lead to it, as well as of those which tempt us astray: so that I can encourage any one who has had the good fortune to enter on one of the former, while I feel the fullest confidence in warning such as are in danger of losing their way, and can tell them whither they will get unless they turn back. I myself had to make my way through a thorny thicket, mostly without a guide; and, alas, at times in opposition to the cautions given me but too forbearingly by those who might have been my guides. Happily—I thank God for it—I never lost sight of the end, and found the road to it again; but I should have got much nearer that end, and with less trouble, had the road been pointed out to me.

I tell you with pleasure, and can do so with truth, that your composition is a creditable proof of your industry; and that I am very glad to see how much you have studied and learnt in the six years

since I last saw you. I perceive you have read much, and with attention and a desire of knowledge. In the first place however, I must frankly beg you to examine your Latin, and to convince yourself that in this respect much is wanting. I will not lay a stress on certain grammatical blunders: on this point I agree entirely with my dear friend Spalding, whom such blunders in his scholars did not provoke, provided his pointing them out availed by degrees to get rid of them. A worse fault is, that you have more than once broken down in a sentence; that you employ words in an incorrect sense; that your style is turgid and without uniformity; that you use your metaphors illogically. You do not write simply enough to express a thought unpretendingly, when it stands clearly before your mind. That your style is not rich and polished is no ground for blame; for although there have been some, especially in former times, who by a peculiarly happy management of a peculiar talent have gained such a style at your age, yet in ordinary cases such perfection is quite unattainable. Copiousness and nicety of expression imply a maturity of intellect, which can only be the result of a progressive development. But what every one can and ought to do, is, not to aim at an appearance of more than he really understands: but to think and express himself simply and correctly. Here, therefore, take a useful rule. When you are writing a Latin essay, think what you mean to say with the utmost distinctness you are capable of, and put it into the plainest words. Study the structure of the sentences in great writers; and exercise yourself frequently in imitating some of them: translate passages so as to break up the sentences; and when you translate them back again, try to restore the sentences. In this exercise you will not need the superintendence of your teacher; do it, however, as a preparation for the practice of riper years. When you are writing, examine carefully whether your language be of one color. It matters not to my mind, whether you attach yourself to that of Cicero and Livy, or to that of Tacitus and Quintilian: but one period you must choose. else the result is a motley style, which is as offensive to a sound philologist, as if one were to mix up German of 1650 and of 1800.

You were very right not to send the two projected essays which you mention; because you can not possibly say any thing sound on such questions. Dissertations on particular points can not be written, until we have a distinct view of the whole region wherein they are comprised, until we can feel at home there, and moreover have a sufficient acquaintance with all their bearings upon other provinces of knowledge. It is quite another matter, that we must advance from the special to the general, in order to gain a true understanding of a complex whole. And here we need not follow any systematic order, but may give way to our accidental inclinations, provided we proceed cautiously, and do not overlook the gaps which remain between the several parts.

You have undertaken to write about the Roman colonies, and their influence on the State. Now it is quite impossible that you can have so much as a half-correct conception of the Roman colonies; and to write about their influence on the state, you should not only accurately understand the constitution of Rome and its history, but should be acquainted with the principles and history of politics; all of which as yet is impossible. When I say this, I will add, that none of us, who are entitled to the name of philologists, could have treated this subject at your age; not even Grotius, or Scaliger, or Salmassius, who were excellent grammarians so much earlier than any of us. Still less suited to you is your second subject. You must know enough of antiquity to be aware that the philosophy of young men, down to a much riper age than yours, consisted in silent listening, in endeavoring to understand and to learn. You can not even have an acquaintance with the facts, much less carry on general reflections,—to let pass the word *philosophical*,—on questions of minute detail, mostly problematical. To learn, my dear friend, to learn conscientiously,—to go on sifting and increasing our knowledge,—this is our speculative calling through life: and it is so most especially in youth, which has the happiness that it may give itself up without hinderance to the charms of the new intellectual world opened to it by books. He who writes a dissertation,—let him say what he will,—pretends to teach: and one can not teach without some degree of wisdom; which is the amenities that, if we strive after it, God will give us for the departing bliss of youth.

What I wish above all things to impress on you, my young friend, is, that you should purify your mind to entertain a sincere reverence for every thing excellent. This is the best dower of a youthful spirit, its surest guide.

I must now say something more to you about your style of writing. It is too verbose; and you often use false metaphors. Do not suppose that I am unreasonable enough to require a finished style. I expect not such from you, nor from any one at your age; but I would warn you against a false mannerism. All writing should merely be the expression of thought and speech. A man

should either write just as he actually delivers a continuous discourse, expressing his genuine thoughts accurately and fully; or, as he would speak, if placed in circumstances in which in real life he is not placed, where he might be called upon to do so. Every thing should spring from thought; and the thoughts should fashion the structure of the words. To be able to do this, we must study language, must enrich our memory with an abundant supply of words and phrases, whether in our mother tongue, or in foreign tongues, living or dead, must learn to define words precisely, and to determine the idiomatic meaning of phrases, and their limits. The written exercises of a boy or lad should have no other object than to develop his power of thinking, and to enrich and purify his language. If we are not content with our thoughts,—if we twist and turn about under a feeling of our emptiness, writing becomes terribly up-hill work, and we have hardly courage to persevere in it. This was my case at your age, and long after. There was no one who would enter into my distress and assist me; which in my youth would have been easy.

Above all things, however, in every branch of literature and science, must we preserve our truth so pure, as utterly to shun all false show,—so as never to assert any thing, however slight, for certain, of which we are not thoroughly convinced,—so as to take the utmost pains, when we are expressing a conjecture, to make the degree of our belief apparent. If we do not, where it is possible, ourselves point out defects which we perceive, and which others are not likely to discover,—if, when we lay down our pen, we can not say, in the presence of God, *I have written nothing knowingly, which after a severe examination, I do not believe to be true, in nothing have I deceived my reader, either with regard to myself or others; nor have I set my most odious adversary in any other light than I would answer for at my last hour*,—if we can not do this, learning and literature make us unprincipled and depraved.

Here I am conscious that I demand nothing from others, of which a higher spirit, reading my soul, could reproach me with ever having done the reverse. This scrupulousness, combined with my conception of what a philologist can and ought to be, if he comes before the world, and with my reverence for great scholars, made me so reluctant, long after I had attained to manhood, to appear with any work. Though often urged to do so, not without reproaches, by my friends, I felt that my hour was not yet come; which, had my life taken another course, might have come several years earlier.

From a young man, were it merely as an exercise of honesty, I demand the most scrupulous truth in literature, as in all other things, absolutely and without exception; so that it may become an integral part of his nature; or rather, that the truth, which God planted in his nature, may abide there. By it alone can we fight our way through the world. The hour when my Marcus should say an untruth, or give himself the show of a merit which he had not, would make me very unhappy.

I come now to another part of my task of giving you advice. I wish you were not so fond of satires, even of Horace's. Turn to those works which elevate the heart, in which you see great men and great events, and live in a higher world: turn away from those which represent the mean and contemptible side of ordinary relations and degenerate ages. They are not fitted for the young; and the ancients would not have let them fall into your hands. Homer, Æschylus, Sophocles, Pindar,—these are the poets for youth, the poets with whom the great men of antiquity nourished themselves; and as long as literature shall give light to the world, they will ennoble the youthful souls, that are filled with them, for life. Horace's Odes, as copies of Greek models, are also good reading for the young; and I regret that it is become the practice to depreciate them, which only a few masters are entitled to do, or can do without arrogance. In his Epistles, Horace is original, and more genial; but he who reads them intelligently, reads them with sorrow; they can not do good to any one. We see a man of noble disposition, but who, from inclination and reflection, tries to adapt himself to an evil age, and who has given himself up to a vile philosophy, which does not prevent his continuing noble, but lowers all his views. His morality rests on the principle of suitableness, decorum, reasonableness; he declares expediency (to take the most favorable expression) to be the source of the idea of right (Sat. I. iii. 93). Baseness decomposes him, and excites him, not to anger, but to a slight chastisement. That admiration for virtue, which constrains us to scourge vice, and which we see not only in Tacitus, but also in Juvenal,—in the latter disgustingly,—is not found in Horace. Juvenal, however, you must not read yet, with the exception of a few pieces: nor is this any loss; for even if you might be allowed to read him, it would not be wholesome at your age, to dwell on the contemplation of vice, instead of enriching your mind with great thoughts.

To these poets, and among prose writers to Herodotus, Thucydides, Demosthenes, Plutarch, Cicero, Livy, Caesar, Sallust, Tacitus, I earnestly entreat you to turn, and to keep exclusively to them. Do not read them to make esthetical remarks on them, but to read yourself into them, and to fill your soul with their thoughts, that you may gain by their reading, as you would gain by listening reverently to the discourses of great men. This is the philology which does one's soul good: learned investigations, when one has attained to the capacity of carrying them on, still are only of secondary value. We must be accurately acquainted with grammar, according to the ancient, wide acceptation of that term: we must acquire all branches of archæology, so far as lies in our power. But even though we were to make the most brilliant emendations, and could explain the most difficult passages off hand, this is nothing but mere trickery, unless we imbibe the wisdom and the magnanimity of the great ancients, feel like them, and think like them.

For the study of language, I recommend you, above all, Demosthenes and Cicero. Take the speech of the former for the *Crown*, that of the latter *pro Cluentio*, and read them with all the attention you are master of. Then go through them, giving account to yourself of every word, of every phrase. Draw up an argument: try to get a clear view of all the historical circumstances, and to arrange them in order. This will give you an endless work; and hence you will learn how little you can, and consequently do yet know. Then go to your teacher,—not to surprise him with some unexpectedly difficult questions (for in the speech for Cluentius there are difficulties with regard to the facts, which, even after the longest familiarity with it, can only be solved by conjectures, such as will not occur to the best scholar at the moment), but that he may have the kindness to consider the passages, and to consult the commentators for you, where your powers and means are at fault. Construct a sketch of the procedure in the accusation against Cluentius. Make a list of the expressions, especially epithets and the nouns they are applied to, and mark the key of the metaphors. Translate passages; and a few weeks after, turn your translation back into the original tongue.

Along with this grammatical exercise, read those great writers, one after the other, with more freedom. But after finishing a book, or a section, recall what you have been reading in your memory, and note down the substance as briefly as you can. Note also the phrases and expressions, which recur to you the most forcibly; and you should always write down every new word you meet with immediately, and read over the list in the evening.

Leave the commentators and emendators for the present unread. The time will come, when you may study them to advantage. A painter must first learn to draw before he begins to use colors: and he must know how to handle the ordinary colors, before he decides for or against the use of ultramarines. Of writing I have already spoken to you. Keep clear of miscellaneous reading, even of the ancient authors: among them too there are many bad ones. Æolus only let the one wind blow, which was to bear Ulysses to his goal: the others he tied up: when let loose, and crossing each other, they occasioned him endless wanderings.

Study history in two ways, according to persons, and according to states. Often make synchronistical surveys.

The advice which I give you, I would give to any one in your place. The blame I should have to give to very many. Do not fancy that I don't know this, or that I do not willingly take account of your industry according to its deserts.

The study which I require of you will make no show, will advance slowly: and it will perhaps discourage you to find that many years of studentship are still before you. But, my friend, true learning and true gain are the read blessing of speculative life; and our lifetime is not so short. Still however long it may be, we shall always have more to learn: God be praised that it is so!

And now, may God bless your labors, and give you a right mind, that you may carry them on to your own welfare and happiness, to the joy of your parents and of us all, who have your virtue and respectability at heart.

### Mary Bradley, the Deaf and Blind Mute.

Attention was called in a recent number to some feature of special interest connected with the case of Laura Bridgeman, the pupil of Dr. Howe of Boston; we have now to note the death of Mary Bradley, an English deaf and blind mute, with whom the same means of instruction had been employed, as have already been described in reference to Laura Bridgeman. The failure of her experience and indefatigable teacher, in successfully applying to Oliver Oswell, another mute, destitute of sight and hearing, the method he had found so

effective in communicating languages, and all consequent instruction to Laura Bridgeman, gives an additional interest to the case now referred to.

Painful, and seemingly irrepairable, as were the privations of Laura Bridgeman, she passed her early years in a comfortable New England home, under her mother's care, and amid the kindly sympathy of friends and neighbours; one of whom, especially, strove in various simple ways to convey to her some knowledge of the outer world. But it was altogether different with the unfortunate blind and deaf mute now referred to. Mary Bradley was deprived of sight and hearing when not more than five years of age, and was found by the English poor-law authorities, in a state of absolute destitution, in a cellar, where she had been abandoned by her heartless parents. She was placed, at first among the children training in Swinton School; but her complicated case of loss of senses seemed to place her beyond the reach of every available means of communicating knowledge, and she became a mere plaything and butt for the other children. She was not, however, long left exposed to such neglect. It fortunately chanced that Mr. Patterson, the master of the Deaf and Dumb Institution at Old Wafford, had his attention called to the case of Laura Bridgeman, chiefly through the statements set forth in Mr. Charles Dickens' "American notes"; and he obtained the permission of the Governor of that Institution to have her placed under his care. She was accordingly removed to the Old Wafford Institution in July, 1846, and has continued to reside there until her recent death. But in her case bodily illness precluded her from that joyous perseverance in the use of what might not inaptly be called her recovered faculties, which renders Laura Bridgeman so pleasing a subject of study. Mary Bradley closed her life in June last, after nine years of almost continual suffering; so that, during a large portion of the period of her residence at Old Wafford, she has been an object of painful interest to her kind guardians in that valuable institution.

The following brief notice refers to the efforts for her instruction which immediately followed her removal from Swinton School; and though it lacks the minute details which give so much interest to the narrative of Dr. Howe's training of Laura Bridgeman, a comparison of it with the facts already stated in reference to the latter, will suffice to show many points in common in the two cases:—

"Mr. Patterson had set himself a most difficult task, and many weeks elapsed before the slightest sign of intelligence was manifested. After six weeks of daily perseverance, however, her face suddenly indicated that her mind had received an impression. Notwithstanding her complete isolation from all the sources of enjoyment around her and the difficulties of communicating information to her, she by slow degrees made considerable progress in acquiring a knowledge of language, and was enabled not only to read the books printed in relief for the blind, but was also able to communicate her thoughts in writing to others. This latter she performed by means of a tablet which Mr. Patterson invented for her, and by its aid she held correspondence with Laura Bridgeman and others. She became quite an adept at the peculiar language of the deaf and dumb. She was also provided with a case of types, which she "set," and which was of great value to her, not only as a means of communicating, but also as exercise in languages. Her favorite books were the gospels, which she frequently read, drawing comfort and satisfaction from them. Her temper was peculiar, probably from the peculiarity of her case; as a rule she was amiable and tractable, but she was from time to time subject to fits of sullenness and irritation, when nothing could please or pacify her, and she was left to herself until, as if exhausted, she would return to her usual mood, and continue tractable for weeks. Much of her time she spent in knitting and sewing small articles, which she generally gave to friends and those who were kind to her."

The generous zeal with which her humane instructor devoted himself to the rescue of this seemingly hopeless outcast from her lonely and dark prison-house is deserving of the highest encomiums; and none the less so from the quiet and unobtrusive manner in which his successful labours have been carried out. The remains of Mary Bradley have been laid to rest in Harpurhey Cemetery; and it is pleasing to be able to add that she died in the firm conviction that she was entering upon a life where the senses of which she had been deprived here would be fully developed.—*Canadian Journal of Industry, Science and Art.*

## OFFICIAL NOTICES.



## APPOINTMENTS.

## SCHOOL COMMISSIONERS.

His Excellency the Governor General in Council was pleased, on the 8th October, 1866, to make the following appointments of School Commissioners and Trustees of Dissident Schools:

County of Chicoutimi, Jonquière, —Messrs. Hector Ouellet, François Tremblay, Jean-Baptiste Régis, Ephrem Villeneuve and Onésime Bedneault.

County of Argenteuil, Grenville, No. Three, —Messrs. Robert Kelly, James Reid, David McNeil, Neil McArthur and John McAllum.

County of Montmagny, St. Paul de Montminy, —Messrs. Jean-Baptiste Talbot, Jean-Bte. Letourneau, Pierre Langlois, Adolphe Blais and Joseph Vallée.

County of Charlevoix, Township of Callières, —Messrs. Jacques Foster, Jean Simard, Lazare Simard, Michel Talon and Séverin Simard.

County of Napierville, St. Michel Archange, —Messrs. Jean-Baptiste Sorel and Honoré Pattenaude.

County of Quebec, St. Dunstan du Lac Beauport, —Messrs. William Nicholson and David McVeigh.

County of Lotbinière, St. Sylvester North, —Messrs. William Monahan and Thomas Sommerville.

County of Lotbinière, St. Sylvester South, —Messrs. Clément Poyard and William Wilson.

County of Arthabaska, Stanfold, —Messrs. Iguace Gagnon and Moïse Réault.

County of Megantic, St. Pierre de Broughton, —Rev. Nicholas Mathias Huot and Mr. Pierre Provençal.

County of Quebec, Stoneham, —Messrs. Thomas Martin and William Dunn

County of Bonaventure, Miguasha, —Messrs. Alexander Campbell and Alexandre LaBillois.

## TRUSTEES OF DISSENTIENT SCHOOLS.

County of Champlain, St. Maurice, —Mr. Samuel Collins.

County of Two Mountains, St. Joseph du Lac, —Mr. Robert Walker.

County of Gaspé, Cap-Désespoir, —Joseph Cass, Esq.

County of Berthier, St. Gabriel de Brandon, —Mr. William Goudie.

County of Ottawa, Ste. Cécile de Masham, —Mr. Moïse Meunier.

## ERECTIIONS, &amp;c., OF SCHOOL MUNICIPALITIES.

His Excellency the Governor General in Council was pleased, on the 12th September, 1866,

1. To detach the following portions of territory from the School Municipality of St. Théodore of Acton, in the County of Bagot, and to annex them to the Municipality of Wickham, in the County of Drummond, for school purposes, to wit: all that part of said municipality of St. Théodore extending from Lot No. 26, in the ninth range, inclusive, to the middle of Lot No. 30, in the same range, inclusive, together with the tenth range from Lot No. 29, inclusive, to the first fourth eastern part of Lot No. 31, also inclusive.

2. To erect the Township of Jonquière, in the County of Chicoutimi, into a Municipality for school purposes, under and by the name of *Municipality of the Township of Jonquière*.

3. To erect into a school municipality, by the name of *Municipality of Grenville No. Three*, in the County of Argenteuil, that portion of the Township of Grenville and augmentation situated on the west of the Red River, and extending from the frontage of the 5th range of said augmentation, commencing at the seignior line and running east, through a small portion of Grenville, to Lot No. 21, on the borders of Red River.

4. To erect the Township of Montminy, in the County of Bellechasse, into a school municipality, by the name of *Municipality of St. Paul de Montminy*.

## DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

## MONTREAL BOARD OF CATHOLIC EXAMINERS.

1st Class Model School, (F.)—Euphémie Duquet and J. B. Priou.

1st Class Elementary, (P.)—Malvina Archambault, Azilda Barré, Vitaline Benuchamp, Lillioso Bonhomme, Zaida Bouc, Delphine Cadieux, Clotilde Elizabeth Chenevert, Mme. Chartrand, née Emilienne Quenneville, Anastasio Coursol, Marie Desautels, Stéphanie Desjardins, Mélima Duguay, Julie Duval, Marie Anne Filteau, Virginie Farand, Julie Fournier, Olivine Gauthier, Albina Caroline Gervais, Thérèse Grisé, Rose de Lima Girouard, Zoé Hervieux, Marie Louise Houhahan, Marie Louise Jacques, Julie Johnson, Victorine Kimmour, Eulalie Labelle, Alphonsine Lachance, Emma Lachapelle, Victorine Lalonde, Rose de Lima Lalap, Rose de Lima Leblanc, Mme. Augustin Ledoux, Elmire Lefebvre, Marie Corine Luckin, Marie Marleau, Catherine McArthur, M. Cléopâtre Mitchell, Céline Montreuil, Domitilde Morin, Sophie Placide Hermine Petit, Vitaline Phaneuf, Joséphine Racicot, Lucie Malvina Ravanelle, Mathilde Rimeur, Marie Lucie Robert, Opportune Euchariste St. Aubin, M. Agnès St. Denis, M. Reine Smith, Ezilda Elm re Thibaut, Célanie Thisaut, E. F. Anna Tucker, Bedelina Tucker, F. Marguerite Veine, Marie Argonie Vian, Philomène Claude, Trésée Lapaine, Charles Barsalou. (E. and F.)—Alexandre Bethune.

2nd Class Elementary, (F.)—Mdm Augustin Ahaire, Marguerite Breunman, Céline Brouillet, Mme Cuisse, née Henriette Jacques, Adeline Dupuis, Emilienne Galipot, Exosle Gareau, M. Armand Gervais, Mme. Hébert, née Olivine St. Denis, Ursule Labrosse. (E. and F.)—Mary M. Moore. (F.)—Melina Piche, Louise Prévost, Norbertine Raisonne, Alphonsine Renaud, Angèle Tellier.

August, 1866.

F. X. VALADE,  
Secretary.

## BOARD OF EXAMINERS OF BONAVENTURE.

1st Class Elementary, (F.)—Angélique Cyr and Luce Bossé.

August, 1866.

GEORGE KELLY,  
Secretary.

## MONTREAL BOARD OF PROTESTANT EXAMINERS.

1st Class Elementary (P.)—M. Louise Cadieux. (E.)—Thankful Carson, Margaret A. Greer, Eliza Jane McBride, Elizabeth McClatchie, Hannah Mitchell, Sarah Robinson, Amelia F. Summerby, Joseph Dowler.

August, 1866.

J. A. GIBSON,  
Secretary.

## BOARD OF EXAMINERS OF PONTIAC.

1st Class Elementary, (E.)—James McLachlan.

2nd Class Elementary, (E.)—Joseph Ed. Babin, Albert Van Camp, Robert Kidney, Jessie Argue.

May, 1866.

OVIDE LEBLANC,  
Secretary.

## SWEETSBURGH AND WATERLOO BOARD OF PROTESTANT EXAMINERS.

1st Class Elementary, (E.)—Charlotte Coburn, Martha E. Ingalls, Mary S. Lorimer, Louisa M. Laughrey, Lily McKinlay, Helen Miner, Sarah A. McKeley, Prudence A. Scofield.

2nd Class Elementary, (E.)—Anna Darby, Edith Tamim, F. Dinna Lassonde.

August, 1866.

WM. GIBSON,  
Secretary.

## SWEETSBURGH AND WATERLOO BOARD OF EXAMINERS.

1st Class Elementary, (F.)—Narcisse Vinet and Edesse Trudeau.

2nd Class Elementary, (E.)—Maggie Caroline, Mary Collins. (E. and F.)—Céline Poirier, Mary Joséphine Vansanford.

August, 1866.

J. P. LANGLOIS,  
Secretary.

## QUEBEC BOARD OF CATHOLIC EXAMINERS.

2nd Class Model School, (F.)—Vitaline Gravel and François Turgeon.  
1st Class Elementary, (E.)—William Taylor.



*2nd Class Elementary (F.)*—M. Mélitino Boutin, Hermine Caron, Marie Rose Alphonsine Gravel, Adèle Laroche, Phœbé Noël, M. Flore Roberge. (E.)—M. Jeanne Lecourt, Zéphirin Bergeron, Narcisse Hamel.  
May, 1866

*1st Class Elementary (F.)*—Claire Picard and M. Philomène Marneau.  
*2nd Class Elementary (F.)*—Philomène Blanchet, M. Philomène Buteau, Hermine Côté, Joséphine Adélaïde Darveau, M. Joséphine Fortin, Philomène Lacasse, Hedwigo Lacerte, Marie Anne Pouliot, Malvina Tanguay. (E.)—Mme veuve Benson, *née* Jane Lamb.  
August, 1866.

N. LACASSE,  
Secretary.

BOARD OF EXAMINERS OF STANSTEAD.

*1st Class Elementary (E.)*—Addie M. Baldwin and Martha E. Foss.  
C. A. RICHARDSON,  
Secretary.

BOARD OF EXAMINERS OF CHARLEVOIX AND SAGUENAY.

*1st Class Elementary (F.)*—Adèle Lavoie, Claire Morin, Léa Pelletier, Pamela Pelletier, Marie Delphine Tremblay.  
*2nd Class Elementary (F.)*—Euchariste Audet.  
August, 1866.

CHS. BOIVIN,  
Secretary.

BOARD OF EXAMINERS OF SHERBROOKE.

*1st Class Model School (E.)*—William T. Wallace.  
*2nd Class Elementary (E.)*—Jane M. Batchelor and Azilda Lathrop.  
August, 1866.

S. A. HURD,  
Secretary.

BOARD OF EXAMINERS OF ATYMER.

*1st Class Elementary (E.)*—Mary E. Greenless, Mary Ann McMillan; Henry Beaumont Small.  
*2nd Class Elementary (F.)*—Clotilde St. Julien.  
August, 1866.

JOHN R. WOODS,  
Secretary.

BOARD OF EXAMINERS OF GASPÉ.

*1st Class Elementary (F.)*—Eugène Ferdinand Morin.  
August, 1866

PHILIPPE VIBERT, JUN.,  
Secretary.

BOARD OF EXAMINERS OF BEAUCE.

*1st Class Elementary (F.)*—Adéline Vachon, Philomène Hébert, Emma Perrault.  
*2nd Class Elementary (F.)*—Marie Duyon, Sophie Bolduc, Athalie Noël, Aurélie Turcot, Rachel Turcot.  
August, 1866.

J. T. T. PROULX,  
Secretary.

BOARD OF EXAMINERS OF RIMOUSKI.

*1st Class Elementary (F.)*—Angèle Lucas.  
August, 1866.

P. G. DUMAS,  
Secretary.

BOARD OF EXAMINERS OF KAMOURASKA.

*1st Class Elementary (F.)*—Adèle Boucher, Cécilire Dubé, Vitaline Gagnon, M. Arsélie Fitzweire, Clémence Lapointe, Anatalie Label, Adélaïde Michaud, Henriette Michaud, Euphémie Morin, Béatrix Pelletier, Athalie Picard, Alexandrine Rioux.

*2nd Class Elementary (F.)*—Victoria Cawn, Françoise Castonguay, Marie Devost, Victoire Dumont, Victoire Gagnon, Marie Marcelline Paradis.  
August, 1866.

P. DUMAIS,  
Secretary.

JOURNAL OF EDUCATION.

MONTREAL (LOWER CANADA), SEPTEMBER AND OCTOBER, 1866

Report of the Superintendent of Education for Lower Canada, for the year 1865.

EDUCATION OFFICE,

Montreal, July 10, 1866.

To the Hon. Provincial Secretary, Ottawa.

SIR,—I have the honor to submit my report on the condition of public instruction for 1865.

In conformity with the decision of the committee superintending the publication of official documents, my report was published *in extenso* last year, and as it is to be so published only every three years, the present report is not accompanied with extracts from the School Inspectors' Reports, but contains merely a general summary of the statistics.

The statistics given in this report point to a steady progress in the diffusion of instruction in its various departments. The following table will show the general results obtained since the year 1853. I would observe that if the number of institutions and pupils is, as usual, somewhat higher in this table than in the general synoptical table giving a summary of the reports of the inspectors and school commissioners, it is because the first has been completed from the table having reference to Superior education, which includes several institutions not taken into account in the general synoptical statement.

TABLE of the Progress of Public Instruction in Lower Canada, since the year 1853.

|                    | 1853.  | 1854.  | 1855.  | 1856.  | 1857.  | 1858.  | 1859.  | 1860.  | 1861.  | 1862.  | 1863.  | 1864.  | 1865.  | Increase over 1853. | Increase over 1856. | Increase over 1858. | Increase over 1864. |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------|---------------------|---------------------|---------------------|
| Institutions . . . | 2352   | 2795   | 2868   | 2919   | 2946   | 2985   | 3199   | 3264   | 3345   | 3501   | 3551   | 3604   | 3706   | 1354                | 787                 | 721                 | 201                 |
| Pupils . . . . .   | 108294 | 119733 | 127058 | 143141 | 148798 | 156872 | 168148 | 172155 | 180845 | 188635 | 193131 | 196739 | 202648 | 94354               | 59507               | 45776               | 5909                |
| Fees . . . . . \$  | 165848 | 238032 | 249136 | 406764 | 424208 | 459396 | 498436 | 503859 | 526919 | 542728 | 564810 | 593964 | 597448 | 431600              | 190684              | 138052              | 3484                |

The increase in the number of institutions of all grades is, this year, 102, against 52 last year; the increase in the number of pupils is 5,909, against 3,603 in 1864. On the other hand, the increase in the amount of school contributions of all kinds, which reached \$28,453.72 in 1864, is only £4,185.39 for 1865. The following is a detailed statement of the school contributions of all kinds in each year, since 1856; it will be observed that the contributions for building schoolhouses have but slightly augmented. I have already, at different times, recommended the adoption of a plan of special aid for this object, which would give an impetus to this important branch of our system of public instruction.

TABLE showing the Sums raised for Public Instruction in Lower Canada, from 1856 to 1865.

| Years.   | Assessment to equal the grant. | Assessment over and above the grant. | Monthly fees. | Assessment for the erection of buildings. | Total amount levied. |
|----------|--------------------------------|--------------------------------------|---------------|---|----------------------|
| 1856 ... | 113884 87                      | 93897 90                             | 173488 98     | 25493 80                                  | 406765 55            |
| 1857 ... | 113887 08                      | 78791 17                             | 208602 37     | 22928 63                                  | 424209 25            |
| 1858 ... | 115185 09                      | 88372 69                             | 231192 65     | 34646 22                                  | 459396 65            |
| 1859 ... | 115792 51                      | 109151 96                            | 251408 44     | 22083 57                                  | 498436 48            |
| 1860 ... | 114424 76                      | 123939 64                            | 249717 10     | 15778 23                                  | 503859 73            |
| 1861 ... | 113969 29                      | 130560 92                            | 264689 11     | 17000 00                                  | 526219 32            |
| 1862 ... | 110966 75                      | 134033 15                            | 281930 23     | 15798 84                                  | 542728 97            |
| 1863 ... | 110534 25                      | 134888 50                            | 307638 14     | 11749 76                                  | 564810 65            |
| 1864 ... | 112158 34                      | 144515 61                            | 321037 30     | 15553 12                                  | 593264 37            |
| 1865 ... | 112447 09                      | 147158 23                            | 324801 87     | 13041 57                                  | 597448 76            |

TABLE showing the Sources from which arises the Difference of Increase, 1st between 1864 and 1863; 2ndly, between 1865 and 1864.

|                                    |         |         |          |         |  | Total Increase. |
|------------------------------------|---------|---------|----------|---------|--|-----------------|
| Increase for 1863 over 1864.....   | 1624 09 | 9627 11 | 13399 16 | 3803 36 |  | 28453 72        |
| Increase for 1865 over 1864.....   | 288 75  | 2642 11 | 3764 57  |         |  |                 |
| Diminution for 1865 over 1864..... |         |         |          | 2511 55 |  | 4184 39         |

The great divisions into which public instruction resolves itself may be summed up as follows with the aid of the returns for Superior education, the School Inspectors' reports, and information obtained by the Department from other sources respecting independent institutions:

RECAPITULATION OF THE FIVE PRINCIPAL DIVISIONS.

| Divisions.            | Number of schools. | Number of teachers. | Number of pupils. |
|-----------------------|--------------------|---------------------|-------------------|
| Superior Schools..... | 10                 | 79                  | 818               |
| Secondary ".....      | 210                | 1099                | 28613             |
| Normal ".....         | 3                  | 31                  | 219               |
| Special ".....        | 4                  | 16                  | 265               |
| Primary ".....        | 3479               | 3561                | 172733            |
| Total.....            | 3706               | 4786                | 202648            |

In this table, the Higher Schools are the universities and independent schools of Theology, of Law, and of Medicine. The Secondary Schools comprise the classical colleges, industrial colleges, boys' academies, and girls' academies. Special Schools include the institutions for the deaf and dumb, the agricultural schools, and the schools of art and manufactures; while to the Primary Schools belong all the model and elementary schools under the control of the commissioners or trustees of dissentients, as well as the independent schools on which any information has been obtained.

The following table, with the exception of the first two items, which have reference to the primary schools alone, shows, as in preceding years, the combined figures of the reports respecting Superior education and those returned by the School Inspectors, as regards the several branches of instruction.

COMPARATIVE TABLE showing the Number of Children learning each branch of instruction, since the year 1853.

|                                   | 1853. | 1854. | 1855. | 1856. | 1857. | 1858. | 1859. | 1860. | 1861. | 1862. | 1863. | 1864. | 1865.  | Increase over 1853. | Increase over 1858. | Increase over 1864. | Diminution from 1864. |
|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------------------|---------------------|---------------------|-----------------------|
| Pupils reading well.....          | 27367 | 32861 | 43407 | 46940 | 48833 | 52099 | 64362 | 67753 | 75236 | 77108 | 77676 | 75555 | 96491  | 69124               | 44392               | 20936               | ....                  |
| Pupils writing.....               | 50072 | 47014 | 58033 | 60086 | 61943 | 65404 | 80152 | 81244 | 87115 | 92572 | 97086 | 99351 | 107161 | 57089               | 41757               | 7810                | ....                  |
| Learning Simple Arithmetic.....   | 18281 | 22897 | 30631 | 48359 | 52845 | 55847 | 63514 | 63341 | 69519 | 74518 | 75719 | 84197 | 83930  | 65649               | 28083               | ....                | 267                   |
| Learning Compound Arithmetic..... | 12428 | 18073 | 22586 | 23431 | 26643 | 28196 | 30919 | 31758 | 41812 | 44357 | 45727 | 46529 | 52892  | 40464               | 24696               | 6360                | ....                  |
| Learning Book-Keeping.....        |       | 799   | 1976  | 5012  | 5500  | 6689  | 7135  | 7310  | 9347  | 9614  | 9630  | 9615  | 10381  | 10381               | 3692                | 751                 | ....                  |
| Learning Geography.....           | 12185 | 13926 | 17700 | 30134 | 33606 | 37847 | 45393 | 49462 | 55071 | 56392 | 60585 | 66412 | 64718  | 52553               | 26871               | ....                | 2175                  |
| Learning History.....             | 6738  | 11486 | 15520 | 17580 | 26147 | 42316 | 45997 | 46324 | 51095 | 54461 | 59024 | 66894 | 71153  | 64415               | 26837               | 4259                | ....                  |
| Learning French Grammar.....      | 15353 | 17852 | 23260 | 29328 | 39067 | 43307 | 53452 | 54214 | 60426 | 61314 | 63913 | 68564 | 76097  | 60744               | 32790               | 7533                | ....                  |
| Learning English Grammar.....     | 7066  | 7097  | 9004  | 11824 | 12074 | 15348 | 19773 | 25073 | 27904 | 26462 | 27358 | 29428 | 30453  | 23387               | 15105               | 1025                | ....                  |
| Learning Parsing.....             | 4412  | 9283  | 16439 | 26310 | 34064 | 40733 | 44466 | 46872 | 49460 | 50893 | 52244 | 60311 | 66237  | 61825               | 25504               | 5926                | ....                  |

In some of these branches, viz., compound arithmetic, French grammar and English grammar, the increase would appear to have been very considerable. For the first time, a diminution in the number of the pupils learning geography has taken place this year.

I reproduce here, as I have done for the year 1864, a statement of the dissentient schools, divided into Catholic Dissentient Schools, and Protestant Dissentient Schools.

TABLE showing the Number of Dissentient Schools and of their Pupils.

| No. | Names of School Inspectors. | No. of Catholic dissentient schools. | Number of pupils. | No. of Protestant dissentient schools. | Number of pupils. |
|-----|-----------------------------|--------------------------------------|-------------------|--|-------------------|
| 1   | J. B. F. Painchaud.....     |                                      |                   |  |                   |
| 2   | Rev. R. G. Pleece.....      | 4                                    | 164               |  |                   |
| 3   | John Meagher.....           | 2                                    | 85                | 1                                      | 60                |
| 4   | Th. Tremblay.....           | 1                                    | 35                |  |                   |
| 5   | Vincent Martin.....         |                                      |                   |  |                   |
| 6   | G. Tanguay.....             |                                      |                   |  |                   |
| 7   | S. Boivin.....              |                                      |                   |  |                   |
| 8   | John Hume.....              | 6                                    | 207               |  |                   |
| 9   | P. F. Béland.....           | 1                                    | 40                |  |                   |
| 10  | F. E. Juneau.....           | 3                                    | 146               |  |                   |
| 11  | F. Crépault.....            |                                      |                   |  |                   |
| 12  | P. M. Bardy.....            | 3                                    | 78                |  |                   |
| 13  | P. Hubert.....              | 2                                    | 67                |  |                   |
| 14  | W. Alexander.....           | 10                                   | 212               | 1                                      | 12                |
| 15  | B. Maurault.....            |                                      |                   |  |                   |
| 16  | H. Hubbard.....             | 4                                    | 98                |  |                   |
| 17  | M. Stenson.....             |                                      |                   | 8                                      | 157               |
| 18  | R. Parnelee.....            | 14                                   | 331               | 12                                     | 501               |
| 19  | J. N. A. Archambault.....   | 3                                    | 95                |  |                   |
| 20  | Chas. DeCazes.....          | 6                                    | 124               |  |                   |
| 21  | Michel Caron.....           | 20                                   | 602               |  |                   |
| 22  | L. Grondin.....             | 11                                   | 472               |  |                   |
| 23  | John Bruce.....             | 7                                    | 280               | 13                                     | 494               |
| 24  | F. X. Valade.....           | 21                                   | 760               |  |                   |
| 25  | A. D. Dorval.....           | 6                                    | 167               | 1                                      | 71                |
| 26  | C. Germain.....             | 5                                    | 145               | 1                                      | 25                |
| 27  | C. B. Rouleau.....          |                                      |                   |  |                   |
| 28  | Bolton Magrath.....         | 17                                   | 650               |  |                   |
|     |                             | 146                                  | 4763              | 37                                     | 1320              |

The Normal Schools have continued to give the same satisfactory results as in former years. Last year's report entered minutely into particulars touching the career of the young men who had left these institutions; it was shown therein that almost all the graduates had taught at least during the three years prescribed by the rules of admission to these schools, and that a large number had continued to teach beyond this period. This information, however, had reference only to the two normal schools Jacques Cartier and Laval. The report of the Principal of the McGill Normal School for the year furnishes evidence on the same point of a character no less satisfactory. Additional details corroborative of this fact, will be found in the reports of the directors of the two other schools.

The following table shows the number of pupils who have attended the Normal Schools since their establishment.

TABLE showing the Number of Pupils who have attended the Normal Schools.

| School Year.           | J. Cartier School.   | McGill Sch.          |                        |        | Laval Sch.           |                        |        | Number of Male Pupil-Teachers. | Number of Female Pupil-Teachers. | Grand Total. |
|------------------------|----------------------|----------------------|------------------------|--------|----------------------|------------------------|--------|--------------------------------|----------------------------------|--------------|
|                        | Male Pupil-Teachers. | Male Pupil-Teachers. | Female Pupil-Teachers. | Total. | Male Pupil-Teachers. | Female Pupil-Teachers. | Total. |                                |                                  |              |
| 1st session, 1857..... | 18                   | 5                    | 25                     | 30     | 22                   | ....                   | 22     | 45                             | 25                               | 70           |
| 1857-1858..            | 46                   | 7                    | 63                     | 70     | 36                   | 40                     | 76     | 89                             | 103                              | 192          |
| 1858-1859..            | 50                   | 7                    | 76                     | 83     | 34                   | 52                     | 86     | 91                             | 128                              | 219          |
| 1859-1860..            | 53                   | 9                    | 72                     | 81     | 40                   | 54                     | 94     | 102                            | 126                              | 228          |
| 1860-1861..            | 52                   | 5                    | 56                     | 61     | 41                   | 53                     | 94     | 98                             | 109                              | 207          |
| 1861-1862..            | 41                   | 10                   | 58                     | 68     | 39                   | 52                     | 91     | 90                             | 110                              | 200          |
| 1862-1863..            | 57                   | 8                    | 72                     | 80     | 39                   | 52                     | 91     | 104                            | 124                              | 228          |
| 1863-1864..            | 56                   | 7                    | 67                     | 74     | 34                   | 49                     | 83     | 97                             | 116                              | 213          |
| 1864-1865..            | 56                   | 5                    | 60                     | 65     | 43                   | 55                     | 98     | 104                            | 115                              | 219          |

If it were possible to form a department for female pupil teachers at the Jacques Cartier Normal School, as it has long been suggested, it could then be truly said that our normal schools supply all the wants of the different classes of our population. To obtain this result an increase in the provincial school grant would have to be provided.

The following table shows the number of diplomas granted by these institutions since their establishment.

DIPLOMAS granted to the Pupils of the Normal Schools, since their establishment.

| Kind of diplomas granted. | Jacques-Cartier.     | McGill.              |                     |        | Laval.               |                     |        | No. of Male Pupil-Teachers. | No. of Female Pupil-Teach. | Grand total. |
|---------------------------|----------------------|----------------------|---------------------|--------|----------------------|---------------------|--------|-----------------------------|----------------------------|--------------|
|                           | Male Pupil-Teachers. | Male Pupil-Teachers. | Female Pupil-Teach. | Total. | Male Pupil-Teachers. | Female Pupil-Teach. | Total. |                             |                            |              |
| Academy.....              | 17                   | 6                    | 4                   | 10     | 13                   | ...                 | 13     | 36                          | 4                          | 40           |
| Model School.....         | 81                   | 13                   | 100                 | 113    | 68                   | 82                  | 150    | 162                         | 182                        | 344          |
| Elementary School..       | 76                   | 27                   | 207                 | 234    | 27                   | 95                  | 122    | 131                         | 302                        | 433          |
| Total.....                | 175                  | 46                   | 311                 | 357    | 108                  | 285                 | 285    | 329                         | 488                        | 817          |

By the reports of the Principals it appears that of the pupils who have left the Normal schools, 503 devoted themselves to teaching; but a higher estimate may be allowed when we take into account the fact that the Principal of McGill Normal School enumerates such pupils only as were actually engaged in teaching at the date of his report, without including those that had abandoned the teacher's vocation.

It will be observed that many among these pupils have been engaged in teaching during periods of four, five, six, seven and even eight years, and that not a few have, with commendable zeal, removed to some of the poorest and most remote localities, a fact which reflects credit alike on these localities and the enterprising spirit of the pupils.

I should fail in my duty did I not again earnestly call the attention of the Government to the dilapidated condition of the building in which the classes of the Jacques Cartier Normal School meet, as also to the just representations urged on the subject by the Principal of the school in his report.

The necessity of completing our normal school system by the establishment of a department for training female teachers in the Jacques Cartier Normal School, and by erecting suitable buildings for this institution and the Normal School at Quebec, has often been represented to the Executive and Legislature. These representations, it is true, have hitherto met with little success, yet it is proper to renew them here.

A similar necessity exists for an increase in the grant accorded to the Superannuated Teachers' Saving Fund. The number of teachers who subscribe to this Fund is very limited, because the pensions accorded are so inconsiderable; and as the number of subscribers does not increase, or rather as it is decreasing, the Government will be under the necessity of abolishing this institution, in which case it should in justice reimburse, with interest, the full amount of the premiums paid in. The sum which would have to be provided in this contingency would exceed the amount of increase in the grant asked for.

The following table exhibits the operations of this Institution since its establishment, and comes in support of the suggestions repeatedly submitted on the subject.

TEACHERS' SAVING FUND.

| Years.    | Number of teachers inscribed each year. | Number of pensioners each year. | Rate of Pension for each year of tuition. | Total pensions paid. |
|-----------|---|---------------------------------|---|----------------------|
| 1857..... | 150                                     | 63                              | \$ cts.<br>4 00                           | \$ cts.<br>886 90    |
| 1858..... | 74                                      | 91                              | 4 00                                      | 2211 74              |
| 1859..... | 18                                      | 128                             | 4 00                                      | 3115 36              |
| 1860..... | 9                                       | 130                             | 3 00                                      | 2821 57              |
| 1861..... | 9                                       | 160                             | 3 00                                      | 3603 58              |
| 1862..... | 10                                      | 164                             | 1 75                                      | 2522 09              |
| 1863..... | 13                                      | 171                             | 2 25                                      | 3237 00              |
| 1864..... | 7                                       | 170                             | 1 75                                      | 2727 00              |
| 1865..... | 11                                      | 160                             | 1 75                                      | 2587 00              |

I shall refrain from enumerating again the reasons so frequently urged in my reports and which should determine the Government and Legislature to adjust the financial difficulties under which this Department labors—difficulties whose causes and development have so often been exposed by me—so as to ensure in a permanent manner the grant to Superior Education, and to increase the aid accorded to Common Schools and poor municipalities. I am not unaware that these subjects occupy the attention of the Government, and can only desire that the hopes entertained by the sincere friends of education will meet the earliest possible realization.

Among the documents forming part of the appendix will be found detailed reports which I have made in accordance with a resolution of the Council of Public Instruction on the inspection of the Boards of Examiners established at Aymer and Portage du Fort. Mr. Dunkin, in compliance with the same resolution, has also visited the Catholic and Protestant Boards of Waterloo, Sweetsburgh and Sherbrooke; his reports, however, have not yet been submitted to the Council.

Subjoined is a table of the statistics furnished annually by the secretaries to the Boards of Examiners.

ANNUAL STATISTICAL SUMMARY of the Boards of Examiners in Lower Canada, for the year 1865.

| BOARD AT                                 | Duration of the sittings, in days. | Number of candidates examined. |  | Number of diplomas granted for academics 1st class. |                  | For academics 2nd class. |                  | For Model Schools 1st class. |                  | For Model Schools 2nd class. |                  | For Elementary Schools 1st class. |                  | For Elementary Schools 2nd class. |                  | Number of candidates admitted, and classification of diplomas. |               |                    | Grand total. | Number of candidates rejected. |
|--|------------------------------------|--------------------------------|--|---|------------------|--------------------------|------------------|------------------------------|------------------|------------------------------|------------------|-----------------------------------|------------------|-----------------------------------|------------------|--|---------------|--------------------|--------------|--------------------------------|
|  |                                    | Number of candidates examined. | Average number of teachers examined daily. | Male Teachers.                                      | Female Teachers. | Male Teachers.           | Female Teachers. | Male Teachers.               | Female Teachers. | Male Teachers.               | Female Teachers. | Male Teachers.                    | Female Teachers. | Male Teachers.                    | Female Teachers. | Academy.   | Model School. | Elementary School. |              |                                |
|  |                                    |                                |  |   |                  |                          |                  |                              |                  |                              |                  |                                   |                  |                                   |                  |  |               |                    |              |                                |
| Montreal (Cath.).....                    | 8                                  | 222                            | 27   | .....   | .....            | .....                    | .....            | 1                            | 2                | 1                            | .....            | 7                                 | 121              | 2                                 | 49               | .....  | 4             | 179                | 183          | 39                             |
| " (Protest.).....                        | 9                                  | 69                             | 7  | 5   | .....            | 1                        | .....            | 3                            | 5                | .....                        | .....            | 8                                 | 31               | 2                                 | 14               | 6  | 8             | 55                 | 69           | .....                          |
| Quebec (Cath.).....                      | 5                                  | 78                             | 15   | .....   | .....            | 1                        | .....            | .....                        | .....            | 1                            | .....            | .....                             | 5                | 2                                 | 35               | 1  | 1             | 42                 | 44           | 34                             |
| " (Protest.).....                        | 5                                  | 28                             | 5  | .....   | .....            | .....                    | .....            | 1                            | .....            | .....                        | .....            | 1                                 | 4                | 4                                 | 11               | .....  | 1             | 20                 | 21           | 7                              |
| Three Rivers.....                        | 4                                  | 53                             | 13   | 1   | .....            | .....                    | .....            | .....                        | 6                | .....                        | 1                | .....                             | 20               | 1                                 | 14               | 1  | 7             | 35                 | 43           | 10                             |
| Sherbrooke.....                          | 4                                  | 57                             | 14   | 2   | 1                | 2                        | .....            | .....                        | 2                | .....                        | 1                | 5                                 | 17               | 4                                 | 19               | 5  | 3             | 45                 | 53           | 4                              |
| Kamouraska.....                          | 4                                  | 38                             | 9  | .....   | 2                | .....                    | .....            | .....                        | .....            | .....                        | .....            | .....                             | 15               | 1                                 | 19               | .....  | .....         | 35                 | 35           | 3                              |
| Gaspé.....                               | 2                                  | 3                              | 1  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 7                                 | .....            | 1                                 | .....            | .....  | .....         | 2                  | 2            | 1                              |
| Stanstead.....                           | 3                                  | 33                             | 11   | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | .....                             | 22               | 3                                 | 8                | .....  | .....         | 33                 | 33           | .....                          |
| Ottawa.....                              | 4                                  | 22                             | 5  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 7                                 | .....            | 12                                | .....            | .....  | .....         | 19                 | 19           | 3                              |
| Beauco.....                              | 4                                  | 18                             | 4  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | .....                             | 5                | .....                             | 13               | .....  | .....         | 18                 | 18           | .....                          |
| Chicoutimi.....                          | 2                                  | 9                              | 4  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 3                                 | 5                | .....                             | 1                | .....  | .....         | 9                  | 9            | .....                          |
| Rimouski.....                            | 3                                  | 13                             | 4  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 1                                 | 3                | 1                                 | 5                | .....  | .....         | 10                 | 10           | 3                              |
| Bonaventure.....                         | 2                                  | 3                              | 1  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | .....                             | 1                | 2                                 | .....            | .....  | .....         | 3                  | 3            | .....                          |
| Pontiac.....                             | 3                                  | 18                             | 6  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 4                                 | .....            | 5                                 | 8                | .....  | .....         | 17                 | 17           | 1                              |
| Richmond.....                            | 4                                  | 30                             | 7  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 1                                 | 10               | 1                                 | 16               | .....  | .....         | 28                 | 28           | 2                              |
| Waterloo and Sweetsburgh (Cath.).....    | 2                                  | 8                              | 4  | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 2                                 | 1                | 1                                 | 2                | .....  | .....         | 6                  | 6            | 2                              |
| Waterloo and Sweetsburgh (Protest.)..... | 4                                  | 48                             | 12   | .....   | .....            | .....                    | .....            | .....                        | .....            | .....                        | .....            | 2                                 | 20               | 3                                 | 21               | .....  | .....         | 46                 | 46           | 2                              |
| <b>Total.....</b>                        | <b>72</b>                          | <b>750</b>                     | <b>149</b>                                 | <b>7</b>  | <b>2</b>         | <b>4</b>                 | <b>.....</b>     | <b>5</b>                     | <b>15</b>        | <b>2</b>                     | <b>2</b>         | <b>42</b>                         | <b>280</b>       | <b>45</b>                         | <b>235</b>       | <b>13</b>  | <b>24</b>     | <b>902</b>         | <b>639</b>   | <b>111</b>                     |

According to the above table and that for last year, there is reason to believe that the resolutions passed by the Council have been productive of some improvement. The inspection of the different Boards of Examiners also shows a much more satisfactory state of things as regards the general standard of primary instruction in Lower Canada, than I could possibly have expected.

The very considerable number of young persons who have written irrefragable dictations before these Boards, judged by the triple test of penmanship, spelling and grammar, is, of itself, tangible evidence of great progress.

Independently of the advance which the increased number of schools and pupils evinces, there can be no doubt that the introduction of new branches and of improved methods, the better qualification of teachers, together with the results obtained, point to a higher standard of instruction.

This fact is confirmed by the remarks of the Principals of the Normal Schools, who have generally found candidates for admission much better prepared than heretofore, and also, as I have frequently been informed, by the experience of Principals of colleges and other institutions devoted to Superior education.

The new regulation of the Council, and the Examination Papers which have been published, have also greatly contributed to this result. Many schools and educational establishments prepare candidates for examination before the Boards of Examiners; and although this task belongs more particularly to the Normal Schools, the fact shows that the Programmes published by order of the Council of Public Instruction have been adopted in many places, and that the standard of primary education tends to become more elevated in consequence of this measure.

I have the honor to be,

Sir,

Your most obedient servant,

PIERRE J. O. CHAUVEAU,  
Superintendent of Education.

#### Professor Miles of Lennoxville.

The following address, which, together with its reply, we cheerfully insert in the columns of our paper, was delivered to Professor Miles at the last Convocation of Bishop's College, being read by Mr. E. A. King, B. A., on behalf of himself and fellow students. The address was privately delivered (only the signers being present), in accordance with the modest request of Mr. Miles. Owing to the immediate dispersion of the parties concerned for their mid-summer holidays, no steps were before taken for its publication.

We very gladly lay it before our readers, to whom Dr. Miles has been long and favorably known, feeling that the College has sustained a great loss, and hoping that the learned gentleman's talents may soon find congenial occupation, profitable to the country at large.

To H. H. Miles, Esq., LL. D., D. C. L., Vice Principal of Bishop's College, Lennox.

We, the Students of this University, desire to give expression to our feelings of unfeigned regret that circumstances have occurred to cause your departure from these halls of learning, from whose professorship they have derived no small degree of honor.

The very fact of your having been connected with this University from its commencement, and the high position that you hold as our Vice-Principal, have a strong demand on our esteem for you.

While these sentiments have an abiding place in our warmest affections, they are not a little increased from the thorough conviction that they are felt equally by the community at large, which could find no better representative than yourself of their interests in the mother country.

Your polished manners, your manifest interest in the students, your most pleasing manner of communicating the vast stores of your well-informed mind, have always made it a most pleasing duty to attend your lectures. Your lengthened services in this University as well as your whitening locks, entitle you to some such appellation as "Sire among the Professors."

But in what manner soever these mental attainments may be viewed, there is also another characteristic, which though last, is by no means the least, the sterling yet unassuming excellencies of character which shed a lustre like a star of the first magnitude over your mental endowments.

We know that it is a little thing for us to express these our sincere feelings, when similar feelings are expressed, not only by the Provincial Universities, but also by your own Alma-Mater.

We cannot close this Valedictory address without expressing our hearty wishes that these high qualifications may soon be required even in a higher and more extended sphere of usefulness. Allow us to include your family when we hope and pray, Sir, that Providence may overrule for good, what is to us a most sincerely regretted change.

James Boydell, B. A., Henry Burges, John F. Carr, W. L. Fraser, E. G. Hale, B. A., J. Hepburn, E. A. King, B. A., Wm. H. Mayo, B. A., C. W. Rawson, B. A., S. Riopel, B. B. Smith, B. A., H. C. Stuart, Charles Thorp, R. Irvine, J. King, J. R. Woodward, G. W. Zulehik.

To which the learned gentleman replied as follows:

To C. W. Rawson, B. A., Wm. H. Mayo, B. A., E. A. King, B. A., B. B. Smith, B. A., E. Hale, B. A., J. Boydell, B. A., and others:

Gentlemen,

In their laudable desire to meet more fully the educational requirements of the community, the governing body of this Institution has been induced to incur so large an expenditure of its funds for additional buildings and appliances, that among other results unforeseen at the outset, the suspension of several of the permanent offices of the senior department became imperatively necessary, and hence arose the circumstances to which you so feelingly allude as being the necessary occasion of a separation, which, I assure you, I deplore as much as yourselves. Since this separation was determined upon, I have been the recipient of several most welcome, and, in some instances, highly complimentary manifestations of sympathy and consideration,—but from no other source could I possibly derive so much of gratification and comfort, under the circumstances, as from the heartily expressed appreciation of you, my pupils and dear young friends.

While I must, for truth's sake, repudiate all claim to those uncommon personal qualifications which, in the warmth of your friendship, you have ascribed to me, I think I need not offer you any assurance that the kindly sentiments uttered in your address to me are mutual; and at this time when my active connection with you as a Professor, and as one of your College authorities, is about to close, it is gratifying to me to reflect that all the intercourse I have had, both with yourselves and your predecessors, has proved uninterruptedly satisfactory.

In conclusion, thanking you for your kind address, and wishing you, one and all, every success in the pursuit of knowledge, and in the future business of life, I think I owe it to the institution in which we have been associated together, not to lose so favorable an opportunity of reminding you that upon your branch—the students and alumni of the present and former years, it must in a great measure depend how long the usefulness of the College is to be impaired by the influence of the causes which temporarily affect the strength of its senior department.

Lennoxville, June 28th, 1866.

Sherbrooke Gazette.

#### Protestant Teachers' Association.

The Annual Convention of the Protestant Teachers' Association of Lower Canada commenced on Friday evening in the Normal School, Belmont street. The number of teachers present was not large. In the absence of the president of the association (Principal Dawson, of McGill College), who had been unexpectedly detained, the senior vice-president, Principal Graham, of St. Francis College, Richmond, occupied the chair and introduced the business of the meeting with a few brief remarks, calling upon the Rev. Dr. Hamilton to open the session with prayer.

The secretary, Professor Robins, then laid the report for last year on the table in a printed form for distribution among the teachers. He also explained that a number of the prominent members of the association had not yet returned from their vacation, and a number had gone to their various fields of labor. A number also, perhaps, stayed away because of the critical position of Protestant education in Lower Canada, not having made up their minds yet what stand they should take in the extraordinary circumstances in which the country was placed.

Principal Graham referred to a common mistake, even among the learned, of deriving the word education from two Latin words, *e* and *ducere*, meaning to draw out, instead of from the almost obsolete Latin word *educare*, which means to nurture or bring up, and includes physical as well as intellectual and moral culture; or, in Scripture language, to train up a child in the way he should go. The functions of the teacher, therefore, were most extensive and comprehensive. He would draw attention to some points which he feared were too much neglected, and one of the most important of these was the train-

ing of the sense of hearing as a means of culture. Very few could repeat a sentence even after having heard it perhaps more than once, and, consequently, the evidence of different persons as to what had been said in their presence, was almost always very different. He had tried to teach habits of listening by making individual members of a class repeat sentences read in their hearing.—In this way great attention and interest were secured, for as none knew who would be called upon to repeat a sentence read, or what sentence would be selected, all soon learned to pay the utmost attention to all that was going on. He had tried this simple plan not only in school but in Bible-classes, and at family worship, for sixteen years, and found it the best cure for listlessness, inattention, and inaccuracy, besides being a most valuable branch of education. He had recommended it to others who also found it to work well, and he now recommended it cordially to the Convention. Another point to which he desired to call their attention was the too general substitution of oral for written recitations. "Writing makes the exact man," and it had been well said there is no better thing to throw out light than a blackboard. The pupil in beginning to learn the alphabet should step up to the blackboard and form the letter as well as he can, and in the same way he should write everything he learns all through the last. In spelling particularly, oral lessons were not nearly so advantageous as writing, and here he might ask, why should spelling be taught from a spelling book? why should it be separated from reading and writing? The child should spell every word he reads or writes; but long columns of words without any connection were tedious, and far too much time was occupied with them. Let pupils copy compositions, making every letter, word, and stop as perfect as possible; and they would learn writing, spelling, and punctuation better than they could be learned separately. Whatever was learned by heart also should be exact. Let the exercise be brief, but insist upon perfect exactitude. These suggestions were alike important in teaching young children or more advanced students.

Prof. Hicks thought conventions of this kind were very valuable both for trained and untrained teachers. They were common in Europe and he had derived much advantage from attending them in England. Their chief object was to discuss educational subjects, and young teachers as well as old should take part in them. Pupils in Normal Schools in Britain were encouraged and enabled to visit the schools in the neighborhood, and report what they had observed. Oral instruction he thought very valuable for bringing the teacher's mind in contact with the minds of the pupils, and it could be communicated to any number at once. The black-board, however, was not sufficiently used. The use of it was a study, and the more experienced a teacher became the more highly he would appreciate it. One thing that hindered the advancement of the profession of teaching very much was leaving it so soon. At the end of three years, instead of leaving the business, the teacher was only beginning to be useful. In the old countries, teachers continued for life in the profession, but they had fair salaries and a retiring allowance in old age. These conditions were also necessary here, and he thought teachers should unite together on some plan to make provision for sickness and old age, and then they could continue in the profession. Government would, he thought, aid them in this.

C. Dunkin, Esq., M. P. P., being called upon as a member of the Board of Public Instruction, said he thought order and discipline were most important in schools. Knowledge is power, but it is the power to do evil if not accompanied by the cultivation of the moral powers. He thought it a great mistake to call upon children to vote the rules of the school. These should emanate from authority, and children should be taught to obey them on that ground.

Mr. Dougall, being called upon by the President, gave a brief account of an American Educational Convention which he had recently attended, dwelling particularly upon some remarkable instances of the power of prayer to subdue rebellious spirits in schools. He added that he hoped this important meeting would give forth some clear deliverance as to what was the duty of Protestants in Lower Canada with respect to education at this crisis.

The interest of the meeting was greatly aided by several fine pieces admirably sung by a choir led by Professor Fowler

#### SECOND DAY.

Dr. Dawson, having arrived in town, took the chair, and apologize for his unavoidable absence the previous evening.

Prayer was offered by the Rev. Dr. Hamilton, and the election of officers for the year was proceeded with by ballot. This resulted in the following appointments:—President, Dr. Dawson, re-elected; Secretary, Professor Darcy, instead of Professor Robins, resigned; Treasurer, Mr. McGregor, re-elected; Vice Presidents and committee *ex-officio* as before.

Dr. Hamilton then delivered, by request, a lecture upon "Gesture,"

with practical illustrations, for which he received the thanks of the meeting.

The committee appointed on the previous evening to present a report on the educational state of the Province, reported a series of resolutions, which after long discussion and considerable alteration and amendment, were adopted, first *seriatim*, and then, as a whole, as follows:—

1. *Resolved*,—That the present meeting of this Association, being the first opportunity of expressing our united views on a subject which is agitating this Province deeply, namely, the security which the Protestant minority in L. C. is to have for the vital interests of education under the approaching Confederation of the Provinces, we hereby express our deep regret that the guarantees promised to Protestants in this matter have not been included in the Provincial legislation preparatory to Confederation; and we hereby declare our conviction that nothing short of the embodiment of the following principles in the Imperial Statute of Confederation will secure the future peace and welfare of this Province.

2. *Resolved*,—That it is as objectionable to compel Protestants to pay for Roman Catholic schools as to pay for Roman Catholic churches; and, therefore, seeing that the majority of the schools in Lower Canada are denominational, the only just principle to apply to the education law is that which has always been applied to the tithe law, namely, that no Protestant shall be required to pay for the support of Roman Catholic Institutions.

3. *Resolved*,—That all direct taxes for the support of schools, paid by Protestants, unless otherwise designated by themselves, should be applied to Protestant or non-denominational education. And that all public monies given for the same purpose should be divided between Protestants and Roman Catholics in proportion to population.

4. *Resolved*,—That in addition to efforts made in this country to secure the object of the foregoing resolutions, we respectfully suggest to Protestants throughout Lower Canada to make known their views on the subject to the Imperial authorities; and that we, on behalf of this Association, appoint a committee to draw up a memorial based on the foregoing resolutions; copies of which to be forwarded through the appropriate channels to Her Gracious Majesty the Queen, the Imperial Parliament, and the Canadian Commissioners appointed to arrange the terms of Confederation.

5. *Resolved*,—That the President of the Association, with the present committee, and the Secretary elect, constitute a committee, to prepare the memorial referred to in the report, and submit it before distribution to the central Executive Committee.

Principal Dawson, in closing the Convention, said that, as he had been so unfortunate as to be absent at the session of yesterday, he would attempt no *résumé* of the proceedings. In relation to the principal discussion of to-day he would say, that though he had little confidence in any effectual interference of the Imperial Government in local educational matters, he did not despair of justice being secured to Protestants in Lower Canada. It should be remembered that the Education Bill introduced by the Government had been defeated by a combination of interests which could not readily occur in a separate Lower Canadian Legislature; that one member of the Ministry, Mr. Galt, had honorably redeemed his pledge by resigning his office; and that the Lower Canadian Premier had pledged himself that justice should be done. It should also be borne in mind that the greater number of our most important demands had the full concurrence of the Superintendent of Education, and were admitted on all hands to be fair and proper. Everything, however, depended on union, and mutual good understanding among Protestants themselves. If this can be maintained, along with the energetic prosecution of our claims, and if we continue to act well our parts in the spheres allotted to us, we have no reason to fear.—*Montreal Witness*.

#### Thirtieth Meeting of the Teachers' Association in Connection with Jacques Cartier Normal School.

(Held 31st August 1866.)

Present:—Hon. P. J. O. Chauveau, Superintendent of Education; Messrs. J. C. Brauneis and F. J. V. Regnaud, Professors in the Normal School; Inspectors Valade, Caron and Grondin; Messrs. J. E. Paradis, President; M. Emard, Vice-President; D. Boudrias, Treasurer; G. F. Dostaler, Librarian; U. E. Archambault and H. E. Martineau, Members of the Council of the Association; T. Armand, M. H. Dostaler, A. Fleury, J. Gariépy, J. E. Labonté, Z. O. H. Larmache, C. Lefebvre, S. A. Longtin, J. Lussier, G. Martin, J. Moller, O. Pelletier, P. Primeau, L. J. René, R. Lavigne, &c.

On motion of Mr. D. Boudrias, seconded by Mr. M. Emard, Mr. U. E. Archambault was elected Secretary *pro tempore*.

The minutes of last meeting having been read and adopted, Mr. J.

E. Labonté lectured on the manner in which the pronunciation of the French language is taught generally in the schools.

A discussion on the following subject then arose: "Which of the French grammars in use in this country (especially Bonneau's, *Grammaire des Frères*, Julien's, and Poitevin's) is best adapted to our schools?"

Inspectors Valade, Caron and Grondin, and Messrs. Boudrias, Emard, Labonté, Martineau, and Archaubault took part in the debate, which was summed up as follows:

Mr. Archaubault moved, seconded by Mr. Emard, and it was *Resolved*,—That this Association respectfully recommends to the Council of Public Instruction the adoption of Messrs. Bonneau's and Poitevin's grammars, and *la Grammaire des Frères*, with exercises, as being the best adapted to school purposes.

The Hon. Superintendent of Education then congratulated Mr. Labonté on his interesting lecture, and invited the teachers to prepare papers on all subjects that have reference to public instruction. He recalled to their minds the important advice he had offered at the last meeting, particularly that which related to their preparing papers on being appointed by the administrative council of the association, and ended with an able dissertation on the difference existing between intonation and pronunciation of the Americans and Europeans.

On motion of Mr. Martineau, seconded by Mr. Boudrias, the Convention was adjourned to the last Friday in January next, at 9 A. M. Messrs. P. Godin, F. Verner and P. Primeau were appointed to lecture at the next meeting.

The following subject will be discussed, "What geography can be taught with the greatest advantage in our schools?"

### Notices of Books and Recent Publications.

*ANNUAIRE de l'Université Laval, pour l'année académique 1866-67; 50-xvi pp. Quebec; Côté.*

This Annual announces the organization of the Faculty of Theology, which renders the University complete. Abbé Taschereau is Professor of Canon Laws, and dean of this Faculty, Messrs. Benjamin Paquet and Louis Honoré Paquet, Professors of Theology, and Mr. Bégin, Professor of Scriptural and Ecclesiastical History.

With regard to the Faculty of Medicine, we remark that, besides the usual clinical lessons in Surgery required by the rules of the Provincial Board, which are given at the Marine Hospital and Hotel-Dieu, the students follow a practical course of Midwifery, attend to the indoor and outdoor patients of the newly established dispensary at Quebec, follow a special practical course on the diseases of the Eye and Ear, and receive practical instruction in Medical Jurisprudence at the dead-house.

In the museum, the mineralogical and zoological collections have been founded and systematically arranged by Mr. Hunt. Several small collections designed to illustrate special branches of study, have been added; as also a collection of the fossils of Canada, classified by our able paleontologist, Mr. Billings. In the zoological museum, the number of ornithological specimens has been increased, and also the specimens in the ethnological museum, of which the most striking feature is Mr. Taché's collection of Huron remains.

**MOUNTAIN.**—A Memoir of George Josaphat Mountain, late Bishop of Quebec. By his son, Armine W. Mountain. 477 pp. 8vo. Montreal, 1866; Lovell.

An excellent photograph of the lately deceased Lord Bishop of Quebec ornaments this work, to which are added Prayers and Poems in the form of an Appendix. The venerable bishop was the author of several poems, among which the *Songs of the Wilderness* (written during a trip to the Red River) hold a prominent place. Among the poetry now published for the first time, are verses in Latin, in Italian and in French. The last are very curious; their archaisms bring us almost as far back as the time of Montaigne, to whom the author was, it is said, related by collateral descent. Enigmas, charades, and amusing witticisms also occur, together with Latin verses on the nomination of Dr. Fulford to the Episcopal See of Montreal, the latter's answer; and an elegy addressed to Mrs. Mountain from Red River.

**BOURASSA.**—*Jacques et Marie, Souvenir d'un peuple dispersé; par Napoléon Bourassa.* Montreal, 1866.—8vo. 306 pp. Eusèbe Sénécal.

The unfortunate race that inhabited the beautiful valleys of Nova Scotia have furnished Mr. Bourassa with a theme. Although the author does not, perhaps, adhere strictly to the manners and customs of the time, which he could only have done by studying the habits, customs and language of the people of Acadia on the spot, he has partly

remedied this defect by eloquent and feeling descriptions of many historical facts and incidents.

**LE CANADA MUSICAL.**—A new monthly review, devoted to literature and art. It is issued to subscribers at one dollar per annum, with the privilege of selecting music for that amount from Mr. Boucher's catalogue. Alluding to the two unsuccessful efforts which have been made to found a periodical of this kind, the editor, Mr. Adélaïde Boucher, expresses the hope, without however seeming to attach an exaggerated importance to the proverb, that the third attempt may be attended with more fortunate results. The periodicals to which the present publication succeeds, were *l'Artiste*, founded 1860, by Messrs. Stevens, Sabatier and Sempé, only two numbers of which saw the light; and *les Beaux-Arts*, edited by Mr. Gust. Smith and published by Messrs. Boucher and Mauseau, that existed from the 1st April 1863 to the 1st May 1861.

**CIVIL CODE OF LOWER CANADA.**—8vo, xviii-747 pp. Ottawa: Malcolm Cameron, Printer to Her Majesty the Queen. English and French texts.

**MCCORD.**—Synopsis of the Changes in the Law effected by the Civil Code of Lower Canada. By T. McCord, Advocate.—8vo. 39 pp. Ottawa: 1866. G. E. Desbarats.

**DE BELLEFEUILLE.**—"Code Civil du Bas-Canada, augmenté des autorités citées par les codificateurs dans le projet soumis à la législature; d'un précis des changements introduits par le Code Civil dans les lois du Bas-Canada, et d'une table des matières, par E. L. de Bellefeuille, avocat." Montreal, 1866; 12m, lxxxiv-612 p. Beauchemin & Valois.

The Civil Code which has now been in force since the first of August last, had scarcely been printed and distributed, when Messrs. de Bellefeuille and McCord published commentaries indicating all the changes which have been made in the law. Mr. Girouard, with equal celerity, also published a similar little treatise in the *Montreal Gazette*.

**VETROMILE.**—The Abnakis and their History, or historical notice on the aborigines of Acadia. By Rev. Eugène Vetromile. New York, 1866.—12mo, 172 pp.

This volume is dedicated to the Right Rev. Mr. Bacon, Bishop of Portland. The author is a missionary who has now been established for many years in the State of Maine; and the work is sold for the benefit of Missions. It is illustrated with numerous lithographs, and both as to the views expressed and the style, is essentially American.

We shall point out one or two assertions the correctness of which, we believe, may be fairly questioned. The author speaks of Capuchins as being established at the Kennebec River; whereas it has always appeared to us that the only members of this Order in the country at that time had settled at the Penobscot River. Mr. Vetromile also says that the vow of the Abenakis to Notre Dame de Chartres dates from the time of the conversion of these aborigines to Christianity. Now, the document attesting the act in question was sent to France in 1691, while the Kennebec Mission was established as early as 1616. Much more might be said with regard to the long dissertation on the origin of the Abenakis and, also, on the word "Abenakis." It is very probable that the different savage tribes of New England belong to the Abenakis family; their dialects greatly resemble that of the Abenakis; but it does not appear certain that these last were the progenitors of all the tribes who inhabited that part of the continent.

Notwithstanding these slight inaccuracies, the *Historical Notices* will be found a valuable acquisition to the student, as it may serve to make him better acquainted with a noble but ill-fated race of men who have almost passed away from among us.

Mr. Maurault, missionary to the village of St. Francis, is the author of a forthcoming history of the Abenakis, which we have reason to believe, will be more complete than the above.

**BOUCHER DE PERTHES.**—*Sous dix Rois. Souvenirs de 1791 à 1860.* Vol. VII. 12mo, pp. 676. Treubbett, Paris, 3 fr. 50 cts.

The author, M. Boucher de Perthes, having acquired celebrity as a writer, philosopher, man of the world, and having besides visited the whole of Europe and taken an active part in the events of his time, could scarcely have failed to interest and instruct his readers. M. de Perthes is the founder of an archeological museum and the author of many learned dissertations. The Department of Public Instruction is indebted to him for a complete series of his works.

**THE JOURNAL OF EDUCATION FOR NOVA SCOTIA.**—We acknowledge with thanks the first number of this new periodical, dated September, and with which we will exchange with great pleasure. It is published at Halifax, under the care of the Education office. The subscription price is one dollar per annum. It is about the size of our own paper and very neatly printed. As the state of education in the

sister provinces must be, under existing circumstances, of great interest to our readers, we give numerous extracts.

**DENISON.**—The Fenian Raid on Fort Erie; with an account of the Battle of Ridgeway; June, 1866. By Major George T. Denison, Jr. Third Edition. With Map and Plan. Toronto: Rollo & Adam. 1866. 92 pp.

In this pamphlet will be found a complete account of the late Fenian invasion, together with a short sketch of the causes that led to the movement. The plan of the campaign, expedition on the tug *Robb*, and other details are fully explained, the subject being rendered perfectly intelligible by the addition of a map and plan. A list of the officers present at the engagement, and of the dead and wounded; the official reports, and other information, are contained in an appendix, the whole forming a valuable and interesting record of the memorable raid which was so gallantly met by the Queen's Own and the other volunteers engaged on the occasion.

**NAPOLEON III.**—*Histoire de Jules César.* By Napoleon III., 2d vol. *Guerre des Gaules.* Royal 8vo, vii-585 pp. 32 engravings. Plon, 15 fr., with atlas.

**ABRÉGÉ DE LA VIE DE M. OLIER, fondateur du Séminaire de Saint-Sulpice et de la Colonie de Montréal, en Canada.**—12mo, 18 pp. Montreal: 1866. Eusèbe Sénécal.

## MONTHLY SUMMARY.

### EDUCATIONAL INTELLIGENCE.

—A statute was passed on the day of the Prorogation to consolidate and amend the Acts relating to reformatory schools in Great Britain. In this Act there are 38 sections and a schedule containing several forms to be used. The Secretary of State is empowered, on the application of the managers of a reformatory school for the better training of youthful offenders, to direct one of the inspectors of prisons to examine into the condition and regulation of the school, and to report to him thereon, and if satisfied with such report the Secretary of State may certify that such school is fitted for the reception of youthful offenders. The school is to be inspected at least once a year, and a certificate may be withdrawn should the inspection be unsatisfactory. Whenever any offender who, in the judgment of the court, justices, or magistrates before whom he is charged, is under the age of 16, is convicted on indictment or in a summary manner of an offence punishable with penal servitude or imprisonment, and is sentenced to be imprisoned for the term of ten days, or a longer period, the court, justices, or magistrates may also sentence him to be sent, at the expiration of his period of imprisonment, to a certified reformatory school, and to be there detained for a period of not less than two years, and not more than five years. A youthful offender under the age of ten years is not to be sent to a reformatory school, unless he has been previously charged with some crime or offence punishable with penal servitude or imprisonment. In choosing a reformatory school, the court is to ascertain the religious persuasion to which the youthful offender belongs when he may be attended by a minister of the same persuasion. The parent or guardian may apply to remove an offender from one school to another, in accordance with his persuasion. The managers of a school may, after 18 months' probation, by a licence, permit a youthful offender to live with any trustworthy and respectable person named in the licence willing to receive and take charge of him. The licence is not to extend beyond three months, nor to be renewed until the detention has expired. Penalties are to be enforced for escape, or on persons assisting in an escape. "The managers of a certified reformatory school may at any time after an offender has been placed out on licence as aforesaid, if he has conducted himself well during his absence from the school, bind him with his own consent apprentice to any trade or calling or service, notwithstanding that his period of detention has not expired, and every such binding shall be valid and effectual to all intents." With regard to the expenses at reformatory schools, it is enacted that the conveyance of an offender and the expenses of proper clothing for his admission are to be defrayed by the prison authorities within whose district he has been last imprisoned. While in school, his parent, step-parent, or other person legally liable to maintain him, may be ordered, if of sufficient ability, to contribute a sum not exceeding 5s. per week. The order may be varied and arrears may be enforced by distress warrant. The Secretary of State is now empowered to send youthful offenders who, before or after the passing of this Act, have been sentenced to transportation, penal servitude, or imprisonment and pardoned on condition of placing themselves under the care of some charitable institution, to a reformatory school for a period not less than two years and not more than five years. There are other provisions to consolidate and amend the Acts on reformatory schools in England and Scotland.—*English Monthly Paper of the National Society.*

### NECROLOGICAL INTELLIGENCE.

—Mr. Siméon Lelièvre, one of the oldest and ablest members of the Quebec Bar, died suddenly in that city on the 26th September, at the age of 62 years. Mr. Lelièvre was admitted to practise law at an early age, and prior to his death, had still displayed the same zeal and activity which distinguished him in the exercise of his profession when in the vigor of his youth. He spoke the English language with more purity and ease, perhaps, than any Canadian of French origin, which did not, however, prevent him from expressing himself correctly in his mother tongue. Having discharged successively the duties of Translator to the criminal courts, Reporter of judicial decisions, and Commissioner for the abolition of the seigniorial tenure, he had more recently been appointed a Queen's Counsel. His name is also associated with several public enterprises, from which his fellow-citizens, as well as himself, have derived mutual benefit. His remains were conveyed to the St. Charles Cemetery and interred in the presence of a large circle of friends.

—The public will learn with sincere sorrow of the death of one of our most esteemed citizens. Mr. T. J. Robertson died last night. For many years the Principal of one of the leading educational institutions of our Province, Mr. Robertson has been prominently before the public, and the high state of efficiency to which his skillful guidance has brought the Normal School shows how complete is the success which has crowned the labours of a long and useful life. A strict disciplinarian, as well as a true scholar, he was peculiarly fitted for the arduous duties of the post he has so well and faithfully filled. Though rigid in discipline, he was yet kind in the discharge of his duty, and among the many that will regret the loss we have all sustained, there will be few truer mourners than the numerous band of students throughout the Province, who can never forget how earnest he was as an instructor—how kind as a friend. But not only will the deceased be missed from the ranks of our scholars, of all manly recreations he was an ardent admirer, and in some of them himself a hearty sharer. Here, released from the cares of the class-room, his genial nature was fully shown, and by his many friends in the Royal Canadian Yacht Club—of which he was so long a zealous officer and member—his welcome presence will be sadly missed. By Mr. Robertson's death, our little band of Canadian authors lose a member, whose place it will be hard to fill. One of the valuable productions of his pen is now in use as a text book in our schools. To own his worth and sincerely regret his loss will be now a mournful pleasure with all those—and how many they are—who have benefited by the labours of his useful life.—*Toronto Telegraph, 27th September.*

### SCIENTIFIC INTELLIGENCE.

—The astronomers promise that on the morning of the 13th or 14th November next will be witnessed a most sublime celestial spectacle—a prodigious flight of meteors. Next in grandeur and sublimity to a total solar eclipse, or a great comet stretched athwart the starry heavens, is a great meteoric shower, such as was witnessed on the 13th of November, 1833. On this occasion, from two o'clock till bright daylight the sky being perfectly serene and cloudless, the whole heavens were lighted with a magnificent and imposing display of fireworks. This display was seen all over North America. A similar display was seen by Humboldt at Cumana, South America, in 1799. A comparison of the epochs of the appearance of these great showers has led to the discovery that they are periodical, their returns being separated from each other by the third part of a century, or some multiple of this period, and are periodical appearances of one grand meteoric shower. Professor Newton, of Yale College, who has devoted much time to the investigation of the periodic character of these showers, finds that a prodigious flight of meteors, the most imposing of its kinds, will make its appearance, probably for the first time in this century, on the morning of the thirteenth or fourteenth of November next. Only thirteen of these great showers are recorded between 903 and 1233. Such a rare phenomenon awakens a deep interest among all classes of persons, and preparations to observe this sublime spectacle for scientific purposes, have already commenced in Europe. Let no one forget Tuesday and Wednesday nights, November 13th and 14th.—*Toronto Daily Telegraph and Evening Journal.*

—The *Scientific American* says:—"While the attention of our people is drawn to the necessity of introducing a cheaper material than coal, as a fuel, our forests are rapidly wasting away. In localities not possessing good facilities for transportation, the trees in the forests are ruthlessly sacrificed, and, if the waste continues in the same ratio for the next half century as it has for fifty years past, there must be portions of our country which will be changed from fertile farms to barren wastes. This is no fancy or sensational statement. The grand reservoirs of our springs, brooks, and rivers are our forests, except on the slopes of mountain ranges. They conserve the moisture deposited by rain and dew, by frost and snow, and deal it out through the arid and thirsty months, giving fertility and verdure to land that otherwise would not feed a goat. Forests serve a grand object in the economy of nature. They should be valued and protected. For this utilitarian reason, as well as for others of a more æsthetic character, we desire to see our forests preserved."



—The *American Artizan* says:—"We have received from the publishers, Miller, Wood & co., 15 Laight street, New York, a pamphlet, being the subject of two lectures delivered in the New York University, on the causes, mode of communication, and means of preventing cholera. A few extracts from it will do no harm, and may do some good. The author believes the germs of cholera to be in the discharges from infected persons; and to be taken up by the air, and carried to some miles distance at least. Persons of good health are able to resist the influences of germs; but those whose digestive organs are impaired by the use of improper food, stimulants, and irregular habits, are very liable to be affected if they inhale air that is tainted by contact with cholera patients. Air from putrid matters is a predisposing cause of cholera; hence he advises the removal of all matters that can putrefy, before they putrefy. Fire is a safe means of preventing putrescence; and should be used when not inconvenient. Lime is slow, but permanent in its effects; charcoal absorbs but not destroys atmospheric poisons, and is not so safe; chloride of lime is quick, and may be best for general use. Strong fumigations are worse than useless, as they merely render the senses unconscious of the presence of foulness in air without destroying its poison. The best plan is to heat rooms up to 220°, which is sufficient to destroy any species of animal or vegetable poison.

The food should be plain and nutritious, and taken at regular hours, and in moderation. All indigestible and badly-cooked food should be avoided. Healthy beef and mutton, good bread, and fresh ripe fruits are recommended; but unripe and stale fruits are deemed dangerous. Watery vegetables, such as turnips, cabbages, cucumbers, and pickles of all kinds, and onions, lettuce, horseradish, and seasoning sauces are tabooed. Pickle and smoked pork, fish, and sausages, lard, rancid butter, old cheese, gravy, pastry, sweetmeats, and candies are also condemned. Alcoholic drinks are to be avoided. Wine to be used very sparingly, by those who are constrained by habit to use it: so with tea and coffee. The general reason for these cautions is that the digestive powers should be kept in their highest efficiency, so that the system may be able to resist the effects of the poison in the air. Moderate exercise, regular sleep, personal cleanliness, and avoidance of dejection and mental excitement, are to complete the guards against cholera.

Now if these preventives were observed by all, cholera would disappear from the earth; but until there is an approximation to this state of defence, we must expect occasional visits of the scourge.

—Mr. Lynn, of the Greenwich Observatory, noticing, in *Astr. Nachr.*, a letter from Herr Schmidt, of the Athens Observatory, stating that between half-past eight and half-past nine, Athens time, on the 12th May, he was surveying the heavens near Corona, and must have seen the so-called "new star," if it had been as large as 5 mag., applied, through Mr. Huggins, to Mr. Birringham, of Tuam, to know at what hour on the same night he saw this remarkable variable as of the 2nd mag. The reply was, not later than 11 45 p.m. local time, whence Mr. Lynn draws the important conclusion, that at 8 p.m., Greenwich time, the star must have been less, and may have been much less, than five mag. and that it increased to the 2nd mag. in four hours, either suddenly or with great rapidity. This star was noticed, on the 4th May, by Mr. Barker, of London, Canada West, as brighter than Corona. He thinks he saw it one or two years ago.—*Intellectual Observer.*

—The inertia of the projectile causes a certain time to elapse before it is set in motion. A certain amount, therefore, of the force of the gunpowder is wasted, and the more rapid the explosion the greater the loss, from this cause. M. Galant, of Liege, has invented a breech-loader which meets this difficulty. The force of the charge is first communicated to an elastic body which is easily set in motion, and the force which in ordinary cases is wasted, but in this is stored up, is gradually communicated to the ball, after it has begun to move. The charge is ignited by a needle, the explosion commencing at the end next the ball, but between the latter and the powder, are placed five pads of felt, those next the ball having been, for the sake of lubrication, moistened with a fatty matter. This arrangement altogether changes the nature of the explosion. A white smoke escapes from the muzzle, instead of flame, and the penetrative effect is so great that with a charge consisting of 6-5 grammes of powder and a cylindrical steel ball weighing fifteen grammes, a plate of steel twenty-nine millimetres thick was perforated at the distance of one hundred metres. Omitting any of the pads causes a proportionate increase in the recoil.—*Ibid.*

—Dr. Davy, finding that a statement made by him many years ago, to the effect that a leech might be frozen without loss of life, was contradicted by more recent experiments of M. Puget, has repeated his investigations on leeches, frogs, etc., and he arrives at the conclusion that "the thorough congelation of an animal is incompatible with life." It is still, however, not certain to what extent congelation may be carried without death necessarily ensuing. What, for example, are we to make of the story of the frozen carp told by Sir J. Franklin, and cited by Mr. Couch? The amount of freezing in these cases may have been nearly complete. Dr. Davy's paper is in *Proceedings of the Royal Society*, 56.—*Ibid.*

—*Proceedings of the Royal Society*, 56, contains a paper by Lieut-General Sabine, F.R.S., on the lunar diurnal variation of the magnetic declina-

tion, and of the horizontal vertical components of the magnetic force, derived from seven years Kew observations, and from comparison with observations in other parts of the world. The paper states that "a magnetic variation shown to be thus obviously dependent upon the moon's position relatively to the terrestrial meridian, and agreeing in its principal features in such various localities, is urged by the author as being ascribable, with great probability, to the direct magnetic action of the moon."—*Ibid.*

#### MISCELLANEOUS INTELLIGENCE.

—Philosophers tell us that the winds gain velocity by unobstructed travel: and the fact is verified by the dreadful hurricane on the ocean, the raging tempest on lake and sea, the awful simoon on the African desert, and the furious tornado on the American prairies—all which strew their paths with desolation, because there are no trees to check the violence of the winds. Even our sudden gusts in summer, when the air becomes too much rarified by heat, are often destructive to life and building.

All these besoms of destruction would be greatly modified could trees be planted in their paths. The trees getting the first strokes, and being flexible, would bend before the blast, breaking its force and making it pass, harmlessly over buildings or other stationary objects. The electric fluid so destructive of life and property, also is attracted by trees, and conducted into the ground; and, in fact trees are the best protectors against all the natural destructive agencies with which man has to contend.

Another consideration as to the value of growing trees is the fact that a park of any size is warmer when belted and grouped with trees, in winter, and cooler in summer, which has been demonstrated by practical experience for centuries. Many fruiting and ornamental plants flourish when so protected, that would not live if exposed to bleak winds. Domestic animals, too, grow faster, thrive better, and give better returns if sheltered and protected by trees. Much better it is also to rest under their broad branches on a hot summer's day or to be enlivened by their cheering green when all else is dull and cheerless.

A feeling of admiration and awe comes over me when I think of the wonderful wisdom shown in the forms or natures of trees to suit our various wants. If we plant trees with naked stems and branchy heads to shut out unsightly views, the work is only half done, as we can see through and under the branches; but when we plant evergreens, whose largest branches are near the ground, they fill up the gap and the work is complete. With fruit trees the same beneficence is manifest. We have to climb up trees to pick the large fruits, which when green are unfit for eating: while it would be tedious to pick the thorny gooseberry and blackberry, did they grow upon trees.

We say therefore, plant trees for shelter and shade, for embellishments to your grounds and adornment to the landscape: they are grand and ennobling: to look upon, and their fruits and timber in a few years growth will be as valuable as gold.—*Gardener's Monthly.*

—Mr. Pollard states that in his drinking days he was the companion of a man in Arundel county, Maryland, who had a monkey that he had valued at a thousand dollars.

We always took him out on chesnut parties, and when he could not shake them off, he would go to the very end of the limbs and knock them off with his fist. One day we stopped at a tavern and drank freely. About half a glass was left, and Jacko drank it up. Soon he was merry, hopped and danced, and set us in a roar of laughter. Jacko was drunk. We all agreed, six of us, that we would come to the tavern next day, and get Jacko drunk again, and have sport all day. I called at my friend's house next morning, and we went out for Jack. Instead of being, as usual, on the box, he was not to be seen. We looked inside, and there he was, crouched up in a heap.

"Come out here!" said his master.

Jack came out on three legs; his fore-paw was on his head. Jack had the headache. I knew what was the matter with him; he felt just as I did many a morning. Jack was sick and couldn't go. So we waited three days. We then went, and while drinking, a glass was provided for Jack. But where was he? Skulking behind the chairs.

"Come here Jack, and drink," said his master, holding out the glass to him.

Jack retreated, and as the door was opened, slipped out, and in a moment was at the top of the house. His master went out to call him down, but he would not come. He got a large whip and shook it at him. Jack sat on the ride-pole and refused to obey. His master got a gun and pointed it at him. A monkey is much afraid of a gun. Jack slipped over the back side of the house when he saw his predicament, at once whipped upon the chimney, and got down in one of the flues, holding on by his fore-paws. The master was beaten. The man kept the monkey twelve years, but could never persuade him to touch another drop of liquor. The beast had more sense than the man who has an immortal soul, and thinks himself the first and best of God's creatures on earth.—*Exchange.*