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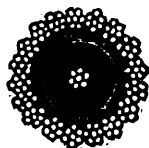


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THE ATLANTIC SUBMARINE TELEGRAPH.

Since the crossing of the Atlantic by steam, no event has occurred which has occasioned such universal rejoicing as the laying of the telegraphic cable on the bed of the same old ocean. This memorable and auspicious event, by which the two great continents of Europe and America were so happily



ATLANTIC TELEGRAPHIC CABLE AND SECTION. (SEE NEXT PAGE.)

united, was successfully consummated on Thursday, the 5th of August; and on that day both ends of the cable were landed,—the one at 5.15 a. m., at Trinity Bay, Newfoundland, and the other at 1 p. m., at Valentia Bay, Ireland.

So much interest attaches to this matter at present, that we insert in this number of the Journal several papers on the subject, including a variety of details of the manner in which the cable was laid.

Mr. Field, the American promoter of the telegraph, states, in his log, that the American steam frigate Niagara arrived at the rendezvous in mid-ocean on the 23rd; the Valorous tender on the 25th; the Gorgon tender on the 27th, and the Agamemnon British man-of-war on the 28th.

The splice was made on the P. M. of the 29th; and at 7.45 in the evening, signals from the Agamemnon ceased. The electricians reported a want of continuity in cable, but insulations perfect. We kept on paying out, and at 11.30 P. M., again commencing, received perfect signals from the Agamemnon.

JULY 30TH.—Distance 89 miles; payed out 131 miles—depth of water 1,550 to 1,975 fathoms.

JULY 31ST.—Distance run 137 miles; payed out 159 miles—depth 1,657 to 2,200 fathoms.

AUGUST 1ST.—Distance run 145 miles; payed out 164 miles—depth 1,950 to 2,400 fathoms.

AUGUST 2ND.—Distance run 154 miles; payed out 177 miles—depth 1,600 to 2,400 fathoms. Niagara getting light and rolling much, not considered safe to carry sail to steady ship, for in case of accident it might be necessary to stop the ship as soon as possible. At 3.38 in the morning, imperfect insulation detected in sending and receiving signals; all right at 8.40 o'clock. Fault in ward room, or about 60 miles from lower end, which was cut out and taken out of circuit.

AUGUST 3RD.—Distance 147 miles; payed out 161 miles—depth 740 to 1,820 fathoms.

11.15 o'CLOCK, A.M.—Received signals from Agamemnon that she had payed out 780 miles.

9 o'CLOCK, P.M.—Received signals from the Agamemnon; was in 200 fathoms water.

10 o'CLOCK P.M.—Niagara in same depth.

AUGUST 4TH.—Distance 146 miles; payed out 154 miles—depth under 200 fathoms. Made land at the entrance of Trinity Bay at eight o'clock.

AUGUST 5TH, 1.45 A.M.—Anchored. Distance 64 miles; payed out 66. Total payed out, 1,016 miles. Distance, 882 miles.

2 o'CLOCK, A.M.—Landed. Informed telegraphs that fleet had arrived.

12.45 A.M.—Received signal from Agamemnon that she had payed out 1,010 miles.

5.15 o'clock, A.M.—Cable landed.

6 o'clock A.M.—Carried to the Telegraph-house, where a strong current was received from the other side of the Atlantic. Captain Hudson of the Niagara read prayers and made remarks.

1 o'clock, P.M.—The Gorgon fired a royal salute of twenty-one guns.

On the 6th we were receiving strong electric signals from Valentia all day.

HOW THE CABLE WAS LAID.

Mr. Field describes the feeling which pervaded all on board the Niagara, while the cable was being laid, as one of the most intense excitement. Every man exerted himself to the utmost to achieve success in the work. Throughout the six and a half days the most perfect silence and attention pervaded the men, lest a single moment of negligence should destroy the cable. On the first day after the paying out began, it was found that the cable was being payed out at a rate which, in proportion to the distance run, would, if continued, have defeated the enterprise. This was owing to the fact that the cable on board the Niagara had caused so much local attraction as to seriously derange the compasses, rendering it impossible to steer the ship. Next day Commander Dayman, of the Gorgon, being apprised of the fact, ran ahead of the Niagara, steering in the most direct course for Trinity Bay. This he continued to do day and night until they arrived, never leaving the deck except for a few moments, and verifying his position by repeated observations of the sun, moon and stars. When his arduous task was accomplished, his eyes were swollen and suffused with blood, from long loss of sleep, and he was almost prostrated from the immense fatigue which he had undergone. Without his assistance the cable would have been exhausted long before the Niagara reached land, and to his exertions therefore the success of the achievement is largely indebted.

On Wednesday morning, August 4, at five o'clock, land appeared to the N. W., about thirty-five miles distant. An hour later the Agamemnon signalled that she had paid out 926 miles of cable, being precisely the same quantity as that laid from the Niagara. At 7½ p.m. Her Majesty's steamer Porcupine hove in sight, and Captain Otter, her commander, who had for some weeks been engaged in surveying Trinity Bay and the Bay of Boules' Arm, boarded the Niagara to pilot her into the harbor. At 8 p.m. Captain Otter reported the telegraph station nineteen miles off. There had been payed out from the Niagara 995 miles, 17 fathoms.

As it would have periled the safety of the cable to have waited for daylight before resuming operations, the steamer was kept right on through the night. Captain Otter, who is a skilful pilot, is also a very prudent man. Anticipating that the Niagara might arrive in the night, he had caused boats to be stationed up the bay, along the course laid out for her, and at a signal the men in them kindled blazing torches, and people along shore lighted huge bonfires, to guide the mariners on their way.

The Niagara, guided by her careful pilot, steamed slowly up the bay, and at 1½ o'clock on the morning of Thursday, August 4, she came to anchor close to the shore, in 17 fathoms of water, having succeeded in her share of the great undertaking. She had payed 1,013 miles, and telegraphic signals were constantly flowing through the entire length.

Mr. Field landed near the Telegraph Station, Trinity Bay, at two o'clock in the morning, and walked to the Station House, half a mile distant, through the wilderness, not a person being visible on the beach. At the Telegraph House he found the operators from London fast asleep, not one of them expecting that the enterprise would succeed; indeed they had not unpacked their trunks, anticipating that in a week or two they would be ordered back to London. The Station House was unfinished, work upon it had ceased, and none of the instruments had been prepared for use. The astonishment of the operators when they learned that the cable was laid may be conceived. At 2.45 a.m. a signal was received from the Agamemnon stating that she had paid 1,010 miles of cable. Mr. Field then telegraphed to the Associated Press the glad tidings of success.

When day broke, the boats were all lowered, and 1,300 fathoms of cable were carried ashore. First Lieut. James H. North handed the shore end to Capt. Hudson, who placed it on the beach. A procession was then formed, headed by Capt. Hudson and Mr. North, followed by the officers of the Niagara, captains of the Gorgon and Porcupine, their officers, crews, and the crew of the Niagara. Each taking hold of the cable, they marched up from the beach to the Telegraph station-house, a distance of a mile, where they deposited the end of the cable. Capt. Hudson then offered prayer and a few remarks appropriate to the occasion, when the ceremony of landing terminated. The officers and crew then returned to their respective boats, reaching their vessels at 6 o'clock in the morning. The Gor-

gon and Porcupine carried the American flag at the fore, the Niagara the English flag at the fore, and the Telegraph flag at the mizzen.

The Agamemnon telegraphed at 1 p.m., on the same day (Thursday, Aug. 5) that she had landed her end of the cable. On the announcement of this fact, the Gorgon fired a salute of twenty-one guns, and her crew, manning the rigging, gave three hearty cheers, which were as heartily returned from the Niagara. All hands then went below to rest from their labors.

The closing entries on the Niagara's log are exciting in the extreme. The sighting of land without a single mishap and with yet sufficient cable left; the captain of a British war steamer coming on board to pilot the Niagara to the anchorage; the signal from the Agamemnon that her work was performed with equal success; the conveyance of the end of the cable into the telegraph house on shore; the final experiment; and the thrill of joy as the electric current passed and returned from shore to shore without interruption. Well might "Capt. Hudson then read prayers," and the triumph this acknowledged and sanctified by joyously announced by a salute of twenty-one guns. Never has the wilderness on the shores of Trinity Bay echoed to such an exulting pean, and never was more regal palace built than that modest station house, which the swift-winged, peaceful oceanic messenger between two mighty nations has adopted as its home. This positive knowledge that THE THING IS DONE is enough to make a man shout aloud in the intensity of his excitement.

In conversation with Mr. Field, we learn that the reason why signals and not words were sent through the cable as it was being laid, is that on the previous attempt the clerks indulged in irrelevant conversation, which distracted attention from duty at a time when the slightest obstruction might be fatal to the work. The Directors therefore ordered that signals only should be sent through the cable from ship to ship. Both vessels had Greenwich time, and the electric current played to and fro between them for ten minutes each way.

The signals showed that on the first day the speed of the Agamemnon slightly exceeded that of the Niagara, but on the succeeding days they went at the same rate, there never being more than twenty miles difference between them. When the cable was landed at both ends, Mr. Field applied his tongue to the end and received the cheering information that the insulation was perfect, in a shock that nearly threw him over. The reason why messages were not transmitted earlier was the fact that all the apparatus at both ends was new and untried, and required a great deal of care and skill to adjust.

REPORT OF THE CAPTAIN OF THE AGAMEMNON.

On the arrival of the Agamemnon at Valentia Bay, her captain made the following report:

VALENTIA, Thursday, August 5th.

The Agamemnon has arrived, and she is about to land the end of the cable. The Niagara is in Trinity Bay, Newfoundland. Good signals exist between the ships.

We reached the rendezvous on the night of the 28th, and the splice with the Niagara cable was made on board the Agamemnon on the following morning.

By noon on the 30th 265 nautical miles were laid between the two ships; on the 31st, 540; on the 1st of August, 884; on the 2nd, 1,256; on the 4th, 1,854; on anchoring, at six in the morning, in Douglas Bay, 2,022.

A breach of continuity occurred in the cable on the evening of the day the Agamemnon and the Niagara parted company in mid-ocean, which lasted one hour and a half. The Agamemnon was stopped and the injury repaired, though not until hopes of holding on to the cable had been abandoned. On the 30th encountered a head gale, against which the ship, under full steam, could hardly make headway. On the three succeeding days the gale continued, with violent squalls, sea running tremendously high, and no one expecting the cable to hold on from one minute to another. On Wednesday the weather moderated, shallow water was gained, and all went well until the Agamemnon anchored in Douglas Bay.

The rate of the Niagara during the whole time has been nearly the same as ours, the length of cable paid out from the two ships being generally within ten miles of each other.

With the exception of yesterday, the weather has been very favorable.

INTERNATIONAL MESSAGES BETWEEN ENGLAND AND AMERICA.

NEW YORK, Aug. 17.

The following message was received from Trinity Bay for Mr. Archibald, one of the Honorary Directors of the Atlantic Telegraph Company:

TRINITY BAY, August 17.

To E. M. Archibald, Esq., British Consul, New York.

The Queen's message was completed at five o'clock this morning. It was commenced yesterday, and during its reception Valentin desisted sending in order to make some slight repairs in the cable. The part received, which was only the first sentence, was sent through mistake South, as if it contained the whole message.

(Signed,) DE SANTY.

THE QUEEN'S MESSAGE.

"To His Excellency the President of the United States.

"Her Majesty desires to congratulate the President upon the successful completion of the great international work, in which the Queen has the deepest interest.

"The Queen is convinced that the President will join with her in fervently hoping that the electric cable which now connects Great Britain with the United States will prove an additional link between the nations, whose friendship is founded upon their common interest and reciprocal esteem.

"The Queen has much pleasure in thus communicating with the President, renewing to him her wishes for the prosperity of the United States."

THE PRESIDENT'S REPLY.

"WASHINGTON, 16th August, 1858.

"To Her Majesty VICTORIA, Queen of Great Britain :

"The President cordially reciprocates the congratulations of Her Majesty the Queen on the success of the great international enterprise, accomplished by the science, skill and indomitable energy of the two countries.

"It is a triumph more glorious, because far more useful to mankind, than ever was won by conqueror on the field of battle.

"May the Atlantic Telegraph, under the blessing of Heaven, prove to be a bond of perpetual peace and friendship between the kindred Nations, and an instrument destined by Divine Providence to diffuse Religion, Civilization, Liberty, and Law throughout the world.

"In this view will not all Nations of Christendom spontaneously unite in a declaration that it shall be for ever neutral, and that its communications shall be held sacred in passing to their places of destination, even in the midst of hostilities ?

(Signed,) "JAS. BUCHANAN."

CYRUS STATION, August 16.

To the Directors of the Atlantic Telegraph Company, New York :

Europe and America are united by Telegraph. Glory to God in the highest ; on earth peace, good will toward men.

(Signed,) 74 DIRECTORS OF THE ATLANTIC TELEGRAPH COMPANY IN GREAT BRITAIN.

GOVERNOR GENERAL'S MESSAGE.

To the Right Honorable the Secretary of State for the Colonies, London, England :

The Governor General of British North America presents his humble duty to the Queen, and respectfully congratulates Her Majesty on the completion of the telegraphic communication between Great Britain and these Colonies.

EDMUND HEAD.

Toronto, August 16, 11 P. M.

THE MAYOR OF NEW YORK'S MESSAGE.

To the Right Honorable the Lord Mayor of the City of London :

I congratulate your Lordship upon the successful laying of the Atlantic Cable, uniting the continents of Europe and America, and the cities of London and New York. The work of Great Britain and the United States. The triumph of science and energy over space, thus uniting more closely the bonds of peace and commercial prosperity, introducing an era into the world's history pregnant with results beyond the conception of the finite man. To God be all the praise.

(Signed,) D. F. TIEMAN,
Mayor of N. Y. City.

THE LORD MAYOR OF LONDON TO THE MAYOR OF NEW YORK.

"LONDON, ENGLAND, August 24.

"To the Hon. D. F. Tieman, Mayor of New York :

"The Lord Mayor of London most cordially reciprocates the congratulations of the Mayor of New York, upon the success of so

important an undertaking as the completion of the Atlantic Telegraph Cable. It is, indeed, one of the most glorious triumphs of the age, and reflects the highest credit upon the energy, skill, and perseverance of all parties entrusted with so difficult a duty, and the Lord Mayor sincerely hopes that, by the blessing of Almighty God, it may be the means of cementing the kind feelings which now exist between the two countries.

(Signed,) "R. W. CARDEN,
"Lord Mayor of London."

THE CONNECTION WITH TRINITY BAY.

The length of the telegraph line from Boston to Trinity Bay is about 1,600 miles—nearly the length of the Atlantic cable. In the course of the route there are submarine wires, both of which, however, have always worked admirably.

The line traverses Maine and New Brunswick, going round the head of the Bay of Fundy. It then takes the northern shore of Nova Scotia, and crosses the Gut of Canso. Here is the first section of submarine telegraph. It is only two and a half miles in length, and serves as a connection between Nova Scotia and Cape Breton, touching the western coast of that island. From the western to the eastern shore at Aspy Bay is a wide space of territory, where the telegraph stations are few and far between, and great difficulty is necessarily experienced in repairing any break.

At Aspy Bay commences the second submarine line, it is 76 miles long, and connects Cape Breton with Newfoundland. The first attempt to lay these wires was made in 1855, but it then proved unsuccessful. In 1856 the effort was renewed with success, and for the last two years there has been little if any interruption of the magnetic union between the two islands. The cable is quite large, composed of three stands, and has three conducting wires. From Port-a-Basque, the cable station on the western part of Newfoundland, the telegraph extends directly across the island to Trinity Bay. The distance is not far from 400 miles through a wild country, and for the most part an unbroken forest, where the trees had to be cut down to make room for the telegraph posts. There are five stations along this whole distance, the territory is sparsely inhabited, and it is easily perceived how hard it must be to discover and rectify any occurrence which should tend to destroy the communication on this section of the line.

This telegraph is owned by three different companies, the American Telegraph, the Provincial, and the Newfoundland and London Telegraph Companies. Being under such different management, the line as a whole, is exceedingly inefficient. Over a portion of it there has been a small amount of business, and no inducement to keep it in good working order.

The land telegraph through Newfoundland runs from St. John's, skirting Trinity Bay, to Cape Bay, on the other side of the island ; thence there is a cable to Ashpee Bay, Breten Island, which connects with the lines through Nova Scotia and New Brunswick and the United States' system down to New Orleans. The working of the land line of about 250 miles across Newfoundland has not hitherto been quite satisfactory, but it answers ordinary purposes, and there is an intention ultimately to avoid it by running a sub-marine cable from Placentia Bay to Cape Breton.

We have not referred to minor cases which prevent telegraphing as effectually as though the wire were displaced. The lightning may melt the magnet at some station, and thus stop telegraphic intercourse, or the machinery meet with some other mischance, producing the same effect. A line like this from Boston to the locality where Europe and America are joined by magnetic bands, is subject to so many vicissitudes, it can be no special wonder to those familiar with the operations of the telegraph, that it is sometimes unable to transmit intelligence beyond a certain point. The misfortune is to have such a state of affairs occur just when every whisper from the extremest limit of the telegraph is anxiously awaited by hundreds of thousands of people in every State in the Union. It may not be amiss to state here that the telegraphing with Halifax may be considered as done by means of a branch telegraph diverging from the Grand Trunk line.

THE ATLANTIC TELEGRAPH COMPANY.

The financial and general position of the Atlantic Telegraph Company now appears to be as follows :—Their original paid up capital was £350,000, and this has since been increased to £456,000, an additional £31,000 having been raised a short time back, and £75,000 in shares having been created to be handed over in payment for the exclusive privileges assigned to the company immediately on the successful completion of the undertaking.

Although the amount to participate in dividends is £456,000, the capital actually received is £681,000. Out of this the charge for the entire cable has been paid, with all other expenses, and a small cash balance is still in hand applicable to the current outlay. It is

understood that the only additional capital now intended to be raised is the small sum that will bring the total to £500,000, and which is required for the stations, &c., that remain to be established. The colonial concessions of the company give them an exclusive right for 50 years as regards the Newfoundland coast and the shores of Labrador and Prince Edward Island, and 25 years as regards Breton Island. They have also a similar privilege for 25 years from the State of Maine.

From the respective Governments of Great Britain and the United States the terms obtained are a payment of £14,000 per annum from each for the transmission of their messages for 50 years, until the dividends amount to 6 per cent. on the original capital of £350,000, after which each Government is to pay £10,000 a year, such payment to be dependent on the efficient working of the line. Previously to the failure of the first expedition, which sailed on the 4th of August, 1857, and lost 383 miles of cable, the £1,000 shares touched about £1,150 or £1,200, and the lowest point has been £300, a sale having been made at that price since the attempt last June, when there was an additional loss of 480 miles. On the present occasion it appears that nearly 500 miles of cable remain, the total paid out from the two ships having been only 2,022 miles.

TRINITY BAY AND SCENERY.

As present events have made this hitherto unknown spot one of the most remarkable localities in the world, and all facts connected with the Ocean Telegraph are sought for with avidity, we lay before our readers the following description of the bay and its scenery :

All who have visited Trinity Bay, Newfoundland, with one consent allow it to be one of the most beautiful sheets of water they ever set eyes upon. Its color is very peculiar—an inexpressible mingling of the pure blue ocean with the deep evergreen woodlands, and the serene blue sky. Its extreme length is about 80 miles, its breadth 30 miles, opening boldly into the Atlantic on the northern side of the Island. At its south western shore it branches into the Bay of Boules' Arm, which is a quiet, safe and beautiful harbor, about two miles in breadth, and nine or ten in length, running north west. The depth of water is sufficient for the largest vessels. The tide rises seven or eight feet, and the bay terminates in a beautiful sand beach. The shore is clothed with dark green fir trees, which mixed with birch and mountain ash present a pleasing contrast. The land rises gradually from the water, all around, so as to afford one of the most convenient and agreeable town sites in the island. You ascend only about a quarter of a mile from the water, and there are no longer trees, but wild grass like an open prairie. Here are found at this season, myriads of the upland cranberries, upon which unnumbered ptarmigan, or the northern partridge, feed. The raspberry, bake-appleberry, and the whortleberry, are also common. Numerous little lakes may be seen in the open elevated ground, from which flow rivulets affording abundance of fine trout. After ascending for about a mile and a half, you are then probably 300 or 400 feet above the tide, and nothing can exceed the beauty of the scene, when at one view you behold the placid waters of both Trinity and Placentia Bays—the latter sprinkled with clusters of verdant islands. You can now descend westward as gradually as you came up from the Telegraph landing, to the shore of Placentia Bay, where there is an excellent harbor and admirable fisheries, skirting the shore, and the accompanying road of the land Telegraph line leading from St. Johns westward through the Island to Cape Ray. At this season of the year game is very abundant. Reindeer in great numbers, bears, wolves, the large northern hare, foxes, wild geese, and ducks, &c. About four miles southward of the entrance of the Bay of Boules' Arm, on the shore of Placentia Bay, is situated the extraordinary La Mache lead mine, the property of the Telegraph Company, already yielding a rich supply of remarkably pure galena. The place where the cable is landed is memorable in the history of the Island as the naval battle ground between the French and the English in their early struggle for the exclusive occupancy of the valuable fisheries along the coast.

VALENTIA BAY AND ISLAND.

Valentia, the terminus of the Atlantic Cable on the other side, is an island of the west coast of Ireland, County Kerry, separated from the mainland by a straight one mile and a half in breadth, which forms the most westerly harbor in the British isles. The harbour is deep, capacious, and land locked, and bids fair to become the westerly terminus of railway communication and principal station for Atlantic steamers. The island measures two by seven miles, and contains 6,371 acres, and a population of 3,000. On it are slate quarries and the mansion of the "Knight of Kerry," chief proprietor. It exports slate, fish, corn and butter. Lat. 51 deg. 55 min. 8 sec. N., lon. 10 deg. 19 min. W.

INTERESTING INCIDENTS CONNECTED WITH THE ATLANTIC CABLE.

A New York journal notices some curious coincidences in the matter of laying the cable, as shown by Mr. Field's letter to the Associated Press. The 29th of the month seems to play quite an important part, both for good and evil, in its history. Thus, for instance, the telegraph fleet sailed from Plymouth on the experimental trip on the 29th of May. The cable was broken at the stern of the Agamemnon on the first attempt to lay it, on the 29th of June; and the splice in mid-ocean on the last and successful attempt was effected on the 29th of July. The fifth of August, too, seems to be, *par excellence*, the red letter day in the company's calendar. On that day, in 1857, the Niagara landed the end of the cable on the Irish shore; and on that same identical day in 1858, the same vessel landed the other end of the cable on the shore of Newfoundland—both ends of the cable being thus laid by the Niagara. On the third of August, 1857, the telegraph squadron left the Cove of Cork for Valentia Bay, and on that very same day 365 years before the little squadron which carried Columbus on his first voyage of discovery to these shores, weighed anchor from the port of Palos in Andalusia, Spain.

It is a singular coincidence that the electric cable which united the three continents of Europe, Africa and America should have been landed in Trinity Bay—*Trin juncta in uno!*

The Queen wrote her message to the President early in June, and sent it to the Lord Lieutenant of Ireland, to be forwarded by him when the cable should be laid. The telegraph expedition which sailed on the 10th June, resulted, however, in a failure. So the Queen's Message remained in the Lord Lieutenant's hands, and shortly after the Queen herself went on a Royal visit to the Continent. When the cable was successfully laid on the 4th of August, the Lord Lieutenant forwarded the message to its destination. This explains why no date specifying time or place accompanied it.

THE ELECTRIC APPARATUS USED ON THE NIAGARA AND AGAMEMNON.

A system was devised for transmitting and receiving signals through the cable, from ship to ship, during the progress of paying out by Mr. Laws and Mr. De Santy, the two gentlemen who have charge of the electrical department on board the Niagara. It was accepted by the directors of the company, and made an order of the Board, by their minutes of June 7, 1858. It consists in an exchange of currents sent alternately during a period of ten minutes by each ship, and which not only serve to give an accurate test of the continuity and insulation of the conducting wire, but also to give certain signals which may be required to be sent when the ships are far apart. For instance, every ten miles of cable payed out is signalized from ship to ship, as also the approach to land or momentary stoppage for splicing, shifting coils, &c. The electrical apparatus employed on board the two vessels is not very complicated, and is simply composed of testing instruments, wholly different from those to be used for the transmission of messages when the ends of the cable shall be landed.

The electric current is generated by sand batteries consisting of plates of zinc and copper, about fourteen square inches each, arranged by pairs. These plates are immersed in a solution of sulphuric acid and water, mixed with saw dust, for the purpose of preventing the liquid from overflowing. Two hundred and forty of these pairs are in operation on board each ship. The instrument used for sending the current thus created through the line is an ordinary commutator, in the form of a reversing key, by which the operator can at will send the zinc or copper current of the battery into the cable, and by so doing change the nature of the signals. The current next passes through an electro-magnetometer, an instrument very useful for the purpose of testing. It is composed of an electro-magnet, the armature of which can be "furthered" or "approached" by a small screw, so as to require a stronger or a weaker current to attract it. It shows the charge as every current flows into the cable and the discharge as it comes out.

Before entering the line the electric current is made to pass through a second instrument called the marine galvanometer, which was invented by Professor Thompson, of Glasgow University, one of the directors of the company. The magnetic needle, which is placed in the centre of a coil of wire, instead of marking its own deflections as in ordinary galvanometers, has a little mirror fixed to it, the reflection of which creates a small spot of light according to the deflection moving on a horizontal scale of white paper, placed at about eighteen inches from the instrument itself. This instrument reports accurately the force of the currents not only in the sending but also in the receiving from the corresponding ship.

Besides this marine galvanometer, the only other instrument in circuit when receiving is the ordinary galvanometer usually employed for testing. According to the nature of the current received, the needle is deflected to the right or the left of a point marked zero on the dial, and where the needle is in a vertical position when no

current is passing through the coil of wire surrounding it. Every one of the deflections read on the galvanometer as also the charge and discharge indicated by the magnetometer are carefully recorded, so that if a defect of continuity or insulation occurred it might be visible by comparison with those received before.

These are all the instruments in the electrical department, and this is a simplified explanation of their various uses, so that the unscientific can understand them.

SLOWNESS OF THE PROCESS OF TRANSMITTING MESSAGES.

Mr. Field states that messages could be sent both ways on the Telegraph before he left Trinity Bay. Private intelligence corroborates this, but adds that the process is, as yet, exceedingly slow. The Queen's Message took an entire day for transmission. The President's probably took another. There is an appreciable time consumed in the passage of the signal across the ocean. Moreover, the signal itself is lengthened out. The difference between the signals received by an ordinary line and those of the ocean cable, is compared to the difference between a short, quick note on a whistle, and the same note prolonged, rising and falling on the swell of an organ. It begins feebly, grows stronger, and then dies gradually. Ordinary instruments are not adapted to this unexpected phenomenon. Hence it is said arises the delay.

The great question of the day is whether the Atlantic Telegraph can, after all, be rendered useful with the apparatus now at our command, or indeed with any apparatus. If it should turn out that, in the very nature of the case, dispatches cannot be transmitted with greater rapidity than fifteen words an hour, for example, a great disappointment will certainly be experienced on the part of the public as well as of the stockholders. On this head the experience of the telegraph lines laid down in the Mediterranean is worthy of consideration. These were the longest submarine lines in existence previous to the great success of Mr. Field and his associates. From Cagliari in Sardinia to Malta the line is six hundred kilometres, or about three hundred and seventy-five miles; and that from Malta to Corfu is of about the same length. Complaints having reached the Sardinian Government of great delay in the transmission of dispatches between Malta and Cagliari they published a statement upon the subject signed by the distinguished Signor Bonelli, who is charged with the inspection of telegraphs in the Ministry of the Interior. According to this eminent electrician, it is found to be impossible as yet, by any system of signs, to transmit more than two or three words in a minute. Thus a dispatch of Indian news containing five hundred and eighty words has required five hours to pass from Malta to Corfu. This being the case with a line of three hundred and seventy-five miles, how much more tardy must be the transmission of news over the line of twenty-one hundred miles beneath the Atlantic?

We understand that the Company propose to give Professor Whitehouse ample time to test his system thoroughly, after which Professor Thompson will test his invention, which is quite different from that of Professor Whitehouse, and after him Professor Hughes of New York will have an opportunity to test the capabilities of his invention, which is, we understand, about to be introduced upon one of the lines between London and Liverpool.

DESCRIPTION OF THE TELEGRAPH CABLE.

Through the courtesy of the Hon. P. J. O. Chauveau, Superintendent of Education for Lower Canada, we are enabled to insert an engraving of the cable, also a section of it. The following description gives a very accurate idea of it:—In appearance, it much resembles the wire ropes sometimes used for raising heavy weights, dumb waiters, etc. The "core," or conductor, which is the nerve of the whole affair, is composed of seven thin copper wires that are singly scarcely as thick as an ordinary brass pin. These seven wires are twisted like a cord, so as to add to their strength, and at the same time, and to enable them to stretch with the untwisting of the outside or protecting wires. This core is heavily coated with gutta percha, and the latter is wrapped with tarred yarn. Outside of this comes the protecting wires which give strength to the entire fabric, and protects the interior from damage. This covering is made of the best wire, twisted up into cords, and with eighteen cords, forming the outside envelope. The entire thickness of the cable is 11-16th of an inch in diameter. We are informed that the weight of the cable is 1,860 pounds to the mile.—The cable is strong enough to bear in water six miles of its own weight when suspended vertically. The strands of protecting wire are quite slender, but it is calculated that in corroding under water, they will unite chemically with the mud in which they will lie, and will thus form a concrete mass, which will not be liable to be damaged. The cost of the telegraph cable has been put down as follows:—

| | |
|---|--------------------|
| Price deep-sea wire per mile..... | \$200 |
| Price spun yarn and iron wire per mile..... | 265 |
| Price outside tar per mile..... | 20 |
| Total per mile..... | \$485 |
| For 2,500 miles..... | \$1,212,500 |
| For 10 miles deep-sea cable, at \$1,450 per mile..... | 14,500 |
| For 25 miles shore ends, at \$1,250 per mile..... | 31,250 |
| Total cost..... | \$1,258,250 |

THE USES OF THE TELEGRAPH.

No doubt every considerable colony of Great Britain will be connected with the mother country ere five years more shall have elapsed, so that the Minister for the Colonies, sitting in his office in Downing-street, may talk with the Governors of all the principal Colonies, successively and interchangeably, in the course of the same evening. Thus a rebellion or savage irruption at the Cape of Good Hope may be known to the British Cabinet within a few hours after its occurrence, and orders despatched instantly to Gibraltar, Calcutta, Bombay, and Sydney, to send a regiment from each to the scene of trouble, and the Minister may announce to Parliament next evening that the troops required have all actually embarked and are on their way. Though there are wider stretches of salt water than that which separates Ireland from Newfoundland, yet no other unbroken line of submerged wire of equal length with the trans-Atlantic cable is required to connect with London the British possessions in every quarter of the globe. Even Australia requires no single cable of equal length with this. India, China, and the Cape of Good Hope, can all be connected with the "fast anchored isle" by lines mainly traversing water of considerably less depth than that which covers the Atlantic plateau, and touching the land every three or four hundred miles if desired.

The New York *Tribune* instances a case in American history in which the telegraph would have been of great use:

On the 18th of June, 1812, the American Government declared war against Great Britain, under the inspiration of the younger and less experienced Republican politicians of that day, overruling the judgment of their older compatriots, who had endured and still remembered the trials and sufferings of our Revolutionary struggle. We had many causes of complaint against Great Britain; but one of the most prominent and palpable was based on her Orders in Council, by which our trade with the Continent had been most outrageously harrassed and crippled. *Those Orders in Council had been repealed before we had declared war*, though the fact was unknown and unsuspected here. Had it been known—in other words, had the Atlantic Telegraph then existed—it is quite probable that war would not have been declared, that further negotiations would have been had, and an amicable redress of grievances attained, saving to each country thousands of precious lives and hundreds of millions of dollars.

Another chapter in the history of the war 1812 affords an illustration equally striking. The battle of New Orleans was fought on the 8th of January, yet articles of Peace had been signed at Ghent on the 24th of December, fifteen days before. The news of this peace did not reach here till the 11th of February, 49 days after it had been signed by the Commissioners. If the oceanic and land telegraph had existed then, what a chain of events would have been broken.

The Transatlantic Telegraph will afford means by which the difference of longitude between observatories in this country and Europe can be determined with the same accuracy as latitude is determined, which is a matter of paramount importance both to the astronomer and navigator. It is consoling to the former, because the transportation of chronometers to Europe and back will be done away with, and the many thousand troublesome observations required for the determination of longitude will be abridged. Heretofore science has not afforded means by which the coast of the United States could be delineated on a chart, in comparative position with the coast of Europe, nearer than a mile. This is one of the many practical benefits which will be realized from the completion of this great work.

CONCEPTION AND HISTORY OF AN INTERNATIONAL TELEGRAPH.

In 1851-2, a young man named F. N. Gisborne, then only recently from England, his native place, engaged in a telegraph office in Montreal. After availing himself of all the scientific results then evolved in regard to telegraphic communication, he conceived the feasibility of a transatlantic line. He proceeded to Halifax full of enthusiasm. Preliminary to the work, he must have a line from Halifax through New Brunswick to the United States. He met with ridicule, but succeeded in getting Howe and Young, leading

government officials, together at a dinner at the house of the latter. He sat opposite to Howe, who was then Provincial Secretary.—There he urged the importance and feasibility of the enterprise with so much clearness as to induce them to make a line across the Province a government measure. It was built and proved a profitable investment.

Gisborne's next move—still with the same great object in view—was to throw a submarine line across the gulf from the main land to Prince Edward Island, by way of experiment. In this, too, he succeeded, and the line is still in good working order, notwithstanding the immense quantities of floating ice with which that coast is visited during the winter season.

The next step was to reach Newfoundland from Cape Breton. To accomplish this, he came to New York, where he succeeded in forming a Company to carry out the enterprise. He returned to Nova Scotia, and in his little steamer, the *F. N. Gisborne*, he proceeded to Newfoundland, where, with six picked Indians, he started on a survey across the Island, some 300 miles, through dense forests.—His Indians failed under the labor and fatigue of the journey, and one after another gave out, and had to be provided for, until he finally got through alone, with his hatchet in his hand and pack of stale provisions on his back. The route was considered favorable, and a gang of laborers were engaged to clear a way for the wires across the Island.

For a while the work prospered, promising the early completion of a submarine line from the Island to Cape Breton, where it would connect with the wires to the United States, and form uninterrupted communication from the States to the eastern extremity of Newfoundland, where the steamers from Europe would be visited by newsboats, as at present, (alas! their occupation is gone!) and the news forwarded from the Island to our cities, until the line across the Atlantic might be completed.

But a cloud of adversity burst over Gisborne's head, which paralyzed his efforts for a time. The New York Company, upon whom he relied for his pecuniary aid, failed, and his drafts were returned dishonored. The work was suspended, and a posse of unpaid laborers surrounded the projector and superintendent of the enterprise, threatening even his life if their bills were not settled. He gave up all his own property, but this did not satisfy the clamor of his hungry creditors, who had him arrested and imprisoned. To add to his grief, his young and lovely wife died, and left him with blighted prospects, both in his pecuniary and his social prosperity.

But those whose minds are capable of grasping such an enterprise as that in which he had been engaged, are not easily crushed. He sent to the head member of the Judiciary, and asked the favor of an interview at his call. To him he stated, that as he had surrendered all his property, he could do no more *there*; but if released, and protected from molestation, he would recognize a new company, and pay all claims.

He was taken at his word. Measures were adopted to release him at once, and the Colonial Parliament, then in session (Spring, 1854), passed an Act granting an appropriation as a loan, from the Provincial Treasury, to pay in part the claims of those laborers whose families were suffering. Gisborne came on to New York. The Company was found to be insolvent. His next efforts was to get up a new one. Among strangers the reader may well imagine the difficulties he must necessarily encounter in this step of his progress.

Where will he find the man who will even stop to listen to his story, much less risk a fortune in such an unparalleled project? He did find the man, and that man was Cyrus W. Field, with whom he succeeded in enlisting the co-operation of Peter Cooper, the millionaire, and four or five others, whose wealth and energies were thrown into the enterprise. The result was the formation of a new company. Mr. Gisborne returned in May, 1854, to Newfoundland, as the superintendent of the enterprise, backed by a responsible company, who assumed all the obligations of the insolvent concern and paid off all claims.

Operations were pushed forward from this date with energy. The line between Nova Scotia and Newfoundland was successfully laid, and has proved entirely satisfactory, notwithstanding that both ends of the cable rest on shores visited by icebergs, but from which no injury has been sustained.

At the completion of this part of the line, a general superintendent of the telegraph was required. Gisborne had the first offer of the office, but he overshot the mark in naming as a salary \$10,000, or something in that vicinity, and the office was given to young McKay, that very efficient superintendent of the Nova Scotia line. Here, unfortunately I think both for himself and for the stockholders, Gisborne's connection with the company ceased.

Sensible of his scientific attainments and unconquerable perseverance, the merchants of Newfoundland invited Mr. Gisborne to a public dinner, and he was soon after elected President of the Mining Association of that island.

In the year 1856, Cyrus W. Field visited England. The result of

his visit was the formation of the Atlantic Telegraph Company, with a capital of £350,000, for the purpose of connecting Europe with America by a submarine telegraph cable. The sequel is well known.

THE SUCCESS OF THE ATLANTIC TELEGRAPH.

(From the *London Times*, August 6.)

By a chain of electric communication, extending from Trinity Bay, Newfoundland, to this metropolis, we are informed that the last attempt to lay the Atlantic Telegraph has succeeded, and that the Old and New World are actually linked together by the magnetic wire. The intelligence is so much the more gratifying as we had been led, in common with the rest of the public—and surely not without very plausible reason—to something like despair, not indeed of the ultimate success of the project, but of its success with the existing machinery, and under conditions so apparently unfavorable. It was not unnatural to apprehend that a cable which had parted at the bottom of the sea, and again within a few feet of the stern of the vessel that was paying it out, would never be stretched in safety across the Atlantic. But the feat has been accomplished, and the relish of the surprise is only the greater from previous disappointment and uncertainty.

We sincerely congratulate the promoters of this great enterprise upon the triumphant success by which, after so many delays and disappointments, they have been rewarded. It is difficult so suddenly to realize the magnitude of the event which has just taken place; the accomplishment of this mighty feat comes upon us not in the gradual and tentative manner in which most scientific exploits have been performed, but with a rapidity worthy of the agent which it employs. The steam engine, the other great discovery of our time, has been perfected little by little, and no one can exactly say when it was that each of the triumphs which it has successively achieved became possible. Practice was so far ahead of theory that high scientific authorities argued strongly against the possibility of results, and were not refuted by counter-arguments, but by the accomplishment of those very results the possibility of which they had denied.

With the Atlantic Telegraph it has been just the contrary. Theory had shown the practicability of the line, but practice lagged infinitely behind it. Instead of proceeding by slow degrees, the projectors have leapt at once to a gigantic success. We believe we are correct in stating that 500 miles of telegraph have never before been successfully laid under water, and yesterday we received intelligence that a communication is fully established beneath 2,000 miles of stormy ocean, under a superincumbent mass of water, the depth of which may be calculated in miles. Only now, when it has succeeded, are we able fully to realize the magnitude and the hardihood of the enterprise. Over what jagged mountain ranges is that slender thread folded; in what deep oceanic valleys does it rest, when the flash which carries the thoughts of men from one continent to another darts along the wire; through what strange and unknown regions, among things how uncouth and wild, must it thread its way? It brings us up tidings from the vast abyss, but not of the abyss itself, but of men like ourselves who dwell beyond.

Since the discovery of Columbus, nothing has been done in any degree comparable to the vast enlargement which has thus been given to the sphere of human activity. We may, now that this most difficult problem of all has been solved, be justified in anticipating that there is no portion of the earth's surface which may not be placed in immediate communication with us. We now know that we have in our hands the means of a practical ubiquity. Distance, as a ground of uncertainty, will be eliminated from the calculation of the statesman and the merchant. It is no violent presumption to suppose that within a very short period we shall be enabled to present to our readers every morning intelligence of what happened the day before in every quarter of the globe.

The Admiralty will know to within a few miles the position of every ship in her Majesty's service. The intelligence of a Caffre war or an Indian mutiny will reach us before the first blood that has been shed is cold, and we shall be able to economize the whole time consumed by the ordinary vehicles of intelligence. We see with not unnatural satisfaction that the advantage of the discovery will be the greatest to those countries the possessions of which are the most remote, and therefore, that England has more to gain than any of her rivals. More was done yesterday for the consolidation of our Empire than the wisdom of our statesmen, the liberality of our Legislature or the loyalty of the colonists could ever have effected. Distance between Canada and England is annihilated. For the purposes of mutual communication and of good understanding the Atlantic is dried up, and we become in reality as well as in wish one country. Nor can any one regard with indifference the position in which the Atlantic Telegraph has placed us in regard to the great American Republic. It has half undone the Declaration of 1775, and gone far to make us once again, in spite of ourselves, one people. To the ties of a common blood, language and religion, to the intimate as-

sociation in business and a complete sympathy on so many subjects, is now added the faculty of instantaneous communication, which must give to all those tendencies to unity an intensity which they never before could possess.

We are most happy that it has fallen to the lot of this country to carry out an enterprise in which human nature is so deeply interested, in concert with the only other nation on the globe in which the flame of Science is fanned and kept alive by the breath of Freedom. Let those who are assembled at Cherbourg to celebrate another development in the art of destruction, and to fête the inauguration of a fortress avowedly designed to threaten the independence and prosperity of these Islands, reflect on the true nature of the enterprise which has thus been executed, and turn from the contemplation of Science degraded into the handmaid of slaughter and devastation, to Science applied to her legitimate office, as the conciliator, the benefactress, and the enlightener of the whole human race. A military Monarchy has created Cherbourg; political freedom and commercial enterprise have made the Atlantic Telegraph, and they have nothing to blush for in the comparison.

THE HON. EDWARD EVERETT ON THE ATLANTIC TELEGRAPH.

The following is from the oration delivered by Mr. Everett, on the occasion of the inauguration of the Dudley Observatory, at Albany, more than a year ago. In enumerating the achievements of science, he said:—

Does it seem much that the skill of men has in these latter days contrived the means of communicating intelligence almost with the rapidity of thought, across the expanse of continents and beneath the depth of oceans, by the electric wire? That a message dispatched from Boston at mid-day will so far out-travel the sun as to reach St. Louis an hour before he arrives at that meridian? It is much—and we contemplate with just amazement the wonderful apparatus which, when laid down—as sooner or later it perhaps will be, so as to connect the three continents—may, by possibility, send the beginning of such a sentence as I am now pronouncing around the terraqueous globe and return it to the lips of the speaker before he has completed his utterance. But this amazing apparatus is but another form of language; it transmits intelligence only as it transmits words. It is like speech, like the pen, like the press, another piece of machinery by which language is conveyed from place to place. The really wonderful thing is language itself, by which thought is made sensible and communicated from mind to mind, not only in the great living congregation of the civilized world for the time being, but through the vast general assembly of the ages, by which we are able at this moment not only to listen to all the great utterances which express the thoughts and emotions of the present day throughout the world, but to soar with Milton to the green fields of Paradise in the morning of creation; to descend with Dante to the depths of penal woe; to listen to the thunders of Tully and Demosthenes, and by the golden chain of etymology, trace the affinity and descent of nations back, through the labyrinth of the past, almost to the cradle of the race.

I hold in my hand a portion of the identical electrical cable, given me by my friend, Mr. Peabody, which is now [April 22, 1857,] in progress of manufacture, to connect America with Europe. I read upon it the following words: "A part of the submarine electric telegraph cable, manufactured by Messrs. Glass & Co. of London, for the Atlantic Telegraph Company, to connect St. John's, Newfoundland, with Valentia, Ireland, a distance of sixteen hundred and forty nautical, or nineteen hundred statute miles." Does it seem all but incredible to you that intelligence should travel for two thousand miles along those slender copper wire, far down in the all but the fathomless Atlantic, never before penetrated by aught pertaining to humanity, save when some foundering vessel has plunged with her hapless company to the eternal silence and darkness of the abyss? Does it seem, I say, all but a miracle of art, that the thoughts of living men—the thoughts that we think up here on the earth's surface in the cheerful light of day—about the markets, and the exchanges, and the seasons, and the elections, and the treaties, and the wars, and all the fond nothings of daily life, should clothe themselves with elemental sparks, and shoot with fiery speed in a moment, in the twinkling of an eye, from hemisphere to hemisphere, far down among the uncouth monsters that wallow in the nether seas, along the wrecked paved floor, through the oozy dungeons of the rayless deep;—that the last intelligence of the crops whose dancing tassels will in a few months be coquetting with the west wind on these boundless prairies, should go flashing along the slimy decks of old sunken galleons, which have been rotting for ages; that messages of friendship and love from warm living bosoms, should burn over the cold green bones of men and women, whose hearts, once as warm as ours, burst as the eternal gulfs closed and roared over them, centuries ago? Behold another phenomenon, of a surety not less surprising—an intellectual electrical telegraph—if I

may so call it—not less marvellous! The little volume which I hold in my hand contains the two immortal poems of Homer, those world renowned strains, which one of the imperial minds of our race not far from thirty centuries ago, poured forth in the delighted ears of heroic Greece, while the softest down of youth was upon the cheek of its young nationality—those glowing, golden legends—that sovereign wrath of Achilles, which

"—shall burn unquenchably,
Until the eternal doom shall be—"

the parting of Hector and Andromache—a scene to which the sad experience of three thousand years could not add one image of tenderness and sorrow; the threats of Jupiter to the awe-struck gods, while every peak of Olympus was ablaze with his leaping thunders; the piteous supplications of aged Priam, kissing the hand and bathing with his tears the feet of the cruel chieftain who had dragged the torn body of his noble son three times round the Ilian wall; the weary and sorrowful wanderings of Ulysses, which every subsequent age of mankind has retraced with delight—these all, like the cunningly imprisoned airs of a musical box, breathe to us in one perennial strain of melody from within the covers of this small volume. By the simple agency of twenty-four little marks, stamped on the written or the printed page of the immortal legend, has flashed down to us through the vicissitudes of empires and eras; across the vast expanse of enlightened and benighted periods of history; from region to region, from his own rocky islet in the Ægean to shores unknown, undreamed of, by him; beneath the overwhelming billows of three thousand years, where peoples whole have sunk; and it now binds together, by the golden wires of intellect and taste, the mind of Europe and America, at this meridian of their refinement, with the mind of every intervening age of literary culture, back to the cradle of infant Greece. And while, at our places of education, we diligently investigate the wonderful properties of matter developed in the phenomena of the physical world, shall we not, my friends, deem a portion of our time and attention well bestowed upon the miracles of the words, written and spoken—the phenomena of language, which lie at the foundation of all our intellectual improvement, of all our literature and science, in a word, of all rational communication between man and man?

PROGRESS OF THE ELECTRIC TELEGRAPH.

The first Telegraph line, actually in practical operation, was that between Baltimore and Washington, completed in 1844, and extending forty miles. From that small commencement arose a system of intercommunication so great that, in the United States alone, there are now 33,000 miles of Telegraph communication, all of which will be connected with the Atlantic Telegraph. In the whole of Europe there are only 38,000 miles of Telegraph—viz: Great Britain, 10,000; Germany and Austria, 10,000; France, 8,000; Prussia, 5,700; Italy, 2,500; Switzerland, 1,500; Spain and Portugal, 600; Holland, 600; and Belgium, 500.

SUBMARINE TELEGRAPHS.

The following is a list of the submarine cables now in existence, and their lengths and date of construction:—

| | Date. | Miles. |
|---|-------|--------|
| Dover and Calais..... | 1850 | 24 |
| Dover and Ostend..... | 1852 | 76 |
| Holyhead and Howth..... | 1852 | 65 |
| England and Holland..... | 1853 | 115 |
| Port Patrick and Donaghadee (2 Cables)..... | 1853 | 26 |
| Italy and Corsica..... | 1854 | 65 |
| Corsica and Sardinia..... | 1854 | 10 |
| Denmark—Great Belt..... | 1458 | 15 |
| “ Little Belt..... | 1853 | 5 |
| “ Sound..... | 1855 | 12 |
| Scotland—Frith of Forth..... | 1855 | 4 |
| Black Sea..... | 1855 | 400 |
| Soland, Isle of Wight..... | 1855 | 3 |
| Straits of Messina..... | 1856 | 5 |
| Gulf of St. Lawrence..... | 1856 | 74 |
| Straits of Northumberland..... | 1856 | 10 |
| Bosphorus..... | 1856 | 1 |
| Gut of Canso, Nova Scotia..... | 1856 | 5 |
| St. Petersburg to Cronstadt..... | 1856 | 10 |
| Atlantic Cable—Valentia Bay to Trinity Bay..... | 1858 | 1958 |
| | | 2,862 |

TELEGRAPHIC PROJECTS IN THE FRENCH FISHING ISLANDS, MEXICO, CUBA, CENTRAL AMERICA AND CALIFORNIA.

We understand that the French Government have granted to the Atlantic Telegraph Company the exclusive right for fifty years to

land telegraph cables on the Islands of Miquelon, which lie between Nova Scotia and Newfoundland, in a direction about twenty miles south-west from the latter, and about 200 miles distant from Sidney, N.S. Having secured the right, the Company proposes to run a cable from Placentia Bay, N.F., to St. Pierre, the chief fish depot of the island, and thence to a point near Sidney, Cape Breton. By this means the two French Islands will be thrown into telegraphic communication with Europe, while the Company will get rid of the necessity of keeping in repair some four or five hundred miles of land line, running across Newfoundland and Cape Breton, through regions where there are no inhabitants except a few scattered Indians, and no roads other than those which have been constructed by the Telegraph Company, at its own expense. In according this liberal grant, the French Government doubtless had in view the advantages it must confer upon its immense fishing interest, which centres at St. Pierre, and which will thus be brought into daily and almost instantaneous communication with France.

In 1856, Mr. Horace B. Tebbets, of New York, who was the pioneer of the Newfoundland Telegraph, visited Florida, and obtained the passage of a general law, authorizing the construction of telegraph lines within that State. He next proceeded to Havana, and by the assistance of Messrs. Torresas and Sama and other capitalists, obtained the assent of the Governor General to a project for a telegraph connecting with Key West. The project was approved in April, 1857, and sent to Spain for ratification. The Spanish Government, however, preferred to wait until the completion of the Atlantic Telegraph line. It is now expected that the royal assent will be given to the Cuban Telegraph Company, and that the work will be commenced in the fall. The lines actually in contemplation are from Key West to Havana; from Havana to Cape Antonio; thence across the channel to Yucatan, forty miles, where it will connect with a line to the city of Mexico already built; also from Yucatan to Tehuantepec on the Pacific, 400 miles, and south from Tehuantepec to Panama, 1100 miles; passing through Nicaragua; also, from Tehuantepec to Santiago, 2000 miles, where there is already a line to San Francisco. All this is within the scheme of the company which Mr. Tebbets has organized at Havana.

II. INFLUENCE OF PARENTAL LOVE ON CHARACTER.

A modern writer relates the following in regard to children:—"I know nothing more touching than the efforts of self-government of which little children are capable, when the best parts of their nature are growing vigorously under the light and warmth of parental love. How beautiful is the self-control of the little creature who stifles his sobs of pain because his mother's pitying eye is upon him in tender sorrow! or that of the babe who abstains from play, and sits quietly on the floor, because somebody is ill. I have known a very young child slip over to the cold side of the bed on a winter's night, that a grown up sister might find a warm one. I have known a little girl submit spontaneously to hours of irksome restraint and disagreeable employment, merely because it was right. Such wills as these—so strong and yet so humble, so patient and so dignified—were never impaired by fear, but flourished thus under the influence of love, with its sweet excitements and holy supports."



TORONTO: SEPTEMBER, 1858.

. Parties in correspondence with the Educational Department will please quote the number and date of any previous letters to which they may have occasion to refer, as it is extremely difficult for the Department to keep trace of isolated cases, where so many letters are received (nearly 800 per month) on various subjects.

REVISED TERMS OF ADMISSION INTO THE NORMAL SCHOOL, TORONTO.

(Adopted by the Council of Public Instruction for Upper Canada, on the 24th day of August, 1858.)

The Council of Public Instruction, anxious to adopt such measures as appear best calculated to render the training of the

Normal School as thorough as possible, and to diffuse its advantages over every county in Upper Canada as equally and as widely as possible, adopts the following regulations in regard to the duration of the future Sessions of the Normal School, and the mode and terms of admitting and facilitating the attendance of students at that Institution.

Ordered, 1. That the semi-annual Sessions of the Normal School shall be held as follows: (1) The Winter Session shall commence on the 8th day of January and close on the 22nd day of June. (2) The Autumn Session shall commence on the 8th day of August and close on the 22nd day of December of each year; [and if those fall upon Sunday, the day following,] each Session to be concluded by an examination conducted by means of written questions and answers, and followed by a vacation as prescribed.

II. That no male student shall be admitted under eighteen years of age, nor a female student under the age of sixteen years. (1) Those admitted must produce certificates of good moral character, dated within at least three months of their presentation, and signed by the clergyman or minister of the religious persuasion with which they are connected; (2) They must be able, for entrance into the Junior Division, to read with ease and fluency; parse any common prose sentence, according to any recognised authority; write legibly, readily and correctly; give the definitions of Geography; have a general knowledge of relative positions of the principal countries, with their capitals, the ocean, seas, rivers, and islands of the world; be acquainted with the fundamental rules of arithmetic, common or vulgar fractions, and simple proportion. They must sign a declaration of their intention to devote themselves to the profession of school-teaching, and state that their object in coming to the Normal School is to qualify themselves better for the important duties of that profession.

III. That upon these conditions, candidates for school-teaching shall be admitted to the advantages of the Institution without any charge, either for tuition, the use of the Library, or for the books which they may be required to use in the School.

IV. That the Teachers in-training shall board and lodge in the city, in such houses and under such regulations as are approved of by the Council of Public Instruction.

V. That a sum at the rate of five shillings per week, (payable at the end of the Session) shall be allowed to each Teacher in-training, who, at the end of the *first or second Session*, shall be entitled to either a first or second class Provincial Certificate; but no Teacher in-training shall be entitled to receive aid for a period exceeding two Sessions, nor unless a higher class (*not grade*) of provincial certificate be obtained.

VI. That all candidates for admission into the Normal School must present themselves during the *first week* of the Session, otherwise they cannot be admitted; and their continuance in the School is conditional upon their diligence, progress, and observance of the General Regulations prescribed by this Council.

VII. That all communications be addressed to the Reverend Dr. RYERSON, Chief Superintendent of Education, Toronto.

By order of the Council of Public Instruction for Upper Canada.

PROGRAMME OF THE ENTRANCE EXAMINATION AND COURSE OF STUDY IN THE NORMAL SCHOOL FOR U. C.

| SUBJECTS. | FOR ENTRANCE INTO JUNIOR DIVISION. | FOR SECOND CLASS CERTIFICATE IN JUNIOR DIVISION, OR FOR ENTRANCE TO SENIOR DIVISION. | FOR ORDINARY FIRST CLASS CERTIFICATE IN SENIOR DIVISION. |
|------------------------------------|---|---|--|
| ENGLISH | Read with ease and fluency. Parse a common prose sentence according to any recognized authority. | Read prose with correct emphasis, intelligence, and inflexion of voice. Rules of Spelling (spelling-book superseded). General principles of the philosophy of Grammar. Analyse and parse any prose sentence. Principal Greek and Latin Roots, Prefixes and Affixes. Prose Composition on any simple subject, with correct punctuation, &c. | Read Poetry and Oratorical Addresses with fluency and expression—Principles of Reading—Science of Languages—General Grammar—Analysis and Parsing of Sentences in Prose and Verse—Changes of construction. Structure of Propositions and Sentences. Etymology—Changes effected in Roots. Correct letter-writing, as regards Composition and mechanical arrangement. Composition on any given subject. History of the Origin and Literature of the English Language. |
| WRITING | Write legibly, and readily and correctly. | To write a bold rapid running hand. | |
| GEOGRAPHY | The definitions—General knowledge of the relative positions of the principal countries, with their capitals—the oceans, seas, rivers, and islands of the world. | The relative positions of all the countries of the world, with their principal cities and physical features; the Islands; Hodgins' Geography of Canada; Mathematical and Physical Geography, as taught in Sullivan's "Geography Generalized." | Use of the Globes—(Keith)—Geography of England, Ireland, Scotland, and the United States—British Colonies (Hodgins)—Rudiments of Physical Geography—(Somerville)—Structure of the Crust of the Earth. |
| HISTORY | None..... | General History of the World, from the Creation to the present time, as sketched in 5th book of lessons. Chronological Chart. | Histories of England and Canada. Philosophy of History. |
| EDUCATION AND THE ART OF TEACHING. | None..... | The general principles of the science of Education—General plan of School organization—Practice of teaching as exemplified in <i>Junior</i> divisions of the Model School. | The science of Education applied to the teaching of Common Schools—Methods of teaching the different branches—Practice thereof with <i>senior</i> division, Model School—Organization of Central Schools—Dimensions and structure of School-houses—Furniture and Apparatus. |
| * MUSIC | None..... | Hullah's System. | Hullah's System. |
| DRAWING | None..... | None. | Facility in making perspective outline sketches of common objects. |
| BOOK-KEEPING | None | The Rudiments. | Single and Double Entry. |
| ARITHMETIC AND MENSURATION. | Fundamental Rules, Vulgar Fractions, and Simple Proportion. | Notation, Numeration, Fundamental Rules in different scales of Notation, Greatest Common Measure, Least Common Multiple, Prime Numbers, Fractions (Vulgar and Decimal), Proportion (Simple and Compound), Practice, Percentage (including Simple Interest, Insurance, Brokerage, &c.) Square and Cube Roots, Mensuration of Surfaces, and Mental Arithmetic. | Review pass subjects of Junior Division—Discount, Fellowship, Barter, Equation of Payments, Profit and Loss, Alligation, Compound Interest, Annuities, Position, Progression, Logarithms and Applications, Intellectual Arithmetic, Mensuration of Surfaces and Solids. |
| ALGEBRA | None | Definitions, Addition, Subtraction, Multiplication and Division. Use of Brackets, Decomposition of Trinomials, Resolution into Factors, Involution, Square of Multinomials, Expansion of $(a+b)^n$, Evolution, Greatest Common Measure, Least Common Multiple, Fractions, Interpretation of Symbol so $\frac{0}{0}$, $\frac{a}{0}$, ∞ , and $=$, Simple Equations. | Review pass subjects of Junior Division, Indices, Surds, Quadratic Equations, Indeterminate Equations, Arithmetical, Geometrical and Harmonical Progression, Ratio, Proportion, Variation, Permutations, Combinations, Binomial Theorem, Notation, Decimals, Interest, &c., Properties of Numbers, Continued Fractions, Exponential Theorem, Logarithms, Algebraic Series, Cubic and Biquadratic Equations. |
| EUCLID | None | Books 1 and 11 with Exercises (Potts)..... | Books III, IV, VI and Definitions of B.V. Exercises on Six Books (Potts.) |
| NATURAL PHILOSOPHY. | None | Properties of Matter, Statics, Hydrostatics, Dynamics, and Hydrodynamics, Human Physiology. | Heat, Light, Electricity, Galvanism, Magnetism, Optics and Acoustics Vegetable Physiology, General View of Geology. |
| CHEMISTRY..... | None | None | Constitution of Matter, Chemical Nomenclature, Symbols, Laws of Combination, Chemical Affinity, Crystallization, Oxygen, Hydrogen, Nitrogen, Carbon, Sulphur, Phosphorus, Chlorine, Calcium, Aluminum, Silicon, Potassium, Sodium, Iodine, Manganese, Magnesium, Iron, Lead, Fluorine and their principal compounds, Nature of Soils, Of Organic Bodies, Germination of the Seed, Development of the Plant, Source of Carbon, Hydrogen and Nitrogen, &c., in Plants, Products of Vegetable growth, Woody Fibre, Gum, Starch, Sugar, Gluten, &c., Cultivation of Plants, Composition and Formation of Soils, Mineral Constituents of Plants, Action of Manures, &c. |

* Not required of those who are naturally disqualified.

ADDITIONAL QUALIFICATIONS FOR HONOR FIRST CLASS PROVINCIAL CERTIFICATE.

- I Each candidate to have held an Ordinary First Class Provincial Certificate for one year.
- II. To give evidence of having been a successful Teacher.
- III. To stand an examination in the following subjects in addition to those necessary for an Ordinary First Class Certificate, viz. :—
 1. English History and Literature.
 2. Canadian History and Geography.
 3. Outlines of Ancient and Modern History and Geography.
 4. Latin Grammar and Books IV, V, and VI of Cæsar's Commentaries.
 5. Outlines of Geology and Astronomy.
 6. Science of Teaching, School Organization, Management, &c.
 7. Logic and Mental and Moral Philosophy (Whateley & Stewart).
 8. Algebra—General Theory of Equations, Imaginary Quantities.
 9. Euclid—Books XI and XII.
 10. Trigonometry as far as solution of Plane Triangles (Colenso).
 11. Inorganic Chemistry (Gregory's Handbook).
 12. The principles of Book-keeping, Music and Drawing.

LIST OF TEXT BOOKS USED IN THE NORMAL SCHOOL FOR UPPER CANADA ;

The use of which is gratuitously allowed to Teachers in-training during their attendance at the School.

National First Book of Lessons.
 National Second Book of Lessons.
 National Third Book of Lessons.
 National Fourth Book of Lessons.
 National Fifth Book of Lessons.
 Sullivan's Spelling Book Superseded.
 National English Grammar.
 National Art of Reading.
 Spaulding's English Literature.
 Hodgins' Geography and History of the British Colonies.
 Sullivan's Geography Generalized, and Somerville's Physical Geography.
 National Arithmetic.
 National Book-Keeping.
 National Mensuration.
 Pott's Euclid.
 Colenso's Algebra (Part I.)
 Tomlinson's Rudimentary Mechanics.
 Fownes' Rudimentary Chemistry.
 Hullah's Manual of Music.
 Art Examples (Dept. Science and Art.)
 A Slate.
 Two Note Books.
 A Writing Book.

IV. Papers on Practical Education.

I. INDUCEMENTS TO ENTER THE TEACHER'S PROFESSION.

1st. The Teacher's employment is one which, as a means of subsistence, will impart the most happiness. Happiness, the object for which our Creator made us, it will not be denied, is the greatest good. Love, the root of happiness, elevates the soul and is its most healthful moral atmosphere. To the true family God has given the most of heaven that can be had in this world, and next to this relation for happiness stands that between teacher and pupil. There is vivid love in the child that lays its cheek against its mother's cheek and throws its arms around her neck. The teacher next claims that child's heart, for as the mature mind needs something above itself to love, something so perfect, so elevated, that the soul may be constantly making progress towards it, so the child must have always before it a superior mind.

His pecuniary compensation is such as to place him in the middle station of life, which affords the fullest security for virtue while it furnishes employment for every good quality he may possess. This station is the most favourable for the cultivation of friendship, whose fruits are peace in the affections, support of the judgment, and aid when and wherever needed.

2nd. It is a situation where he can be most useful. The public lecturer is exerting an extensive influence for good. As he goes, a stranger, from place to place, he has no fears to speak of existing abuses, and though he may severely reprove those before him for their neglect, yet they can not take offence, and, soon after, streets are cleaned and paved, shade trees set out, churches, town-houses and lecture-rooms are repaired, and the village undergoes a thorough reformation.

The press is feeding thousands of minds. It affords amusement and pleasure in the parlor, exciting thought, and giving to the tongue freedom to express the half-formed ideas. At times it causes the tears to flow in common, and again a general burst of joy shows unity of feeling, thus increasing understanding between kindred spirits. It gives comfort to the sick chamber, carries happiness to the home of poverty, bidding labor and hope. Its fruits are not lost in the railway station, in the cabin, nor does it fail to make the child more thoughtful and wise, and the aged to experience again the glow of youthful feeling.

The influence of the ministry, with its hallowed association, the fruits it yields here and the promises of a hereafter, can not be estimated. But the teacher's privilege is superior to that of the lecturer, the press, and the ministry, for he can pour into the unbiassed minds of others his treasures of knowledge, reflection and experience—he can win the child, and through him send truth to the conscience of the parent with conviction and acceptance.

3rd. The teacher's employment affords the means for his own greatest intellectual and moral growth. Before hearing a recitation he must prepare himself by fresh study, and thus addition is made to what he previously had learned. He also gains new ideas from his pupils' researches.

Experience has proved that there can be no situation in which a conscientious person can be placed that will lead to closer examining of one's own motives and springs of action, than in being called upon to direct the moral discipline of others. The teacher soon finds example to be far more powerful than ought else, in establishing a sure system of government; hence he is induced to discipline his outward acts, and next master his thoughts. After this is effected he finds the obedience and love of the majority gained, and a deeper interest excited in every duty.

4th. The Teacher has the satisfaction of witnessing constant growth of mind among his pupils. What can be more delightful than to see a young and timid spirit, unconscious to itself draw aside the veil of reserve which shrouded its individuality and with freedom display his faculties while the teacher is speaking,—to observe the soul's expansion as it grasps and assimilates some new idea which he has presented. It is grateful to the laborious student to mark progress in his own mind's cultivation, but the teacher sees a multitude, through his instrumentality, going daily from strength to strength. If he has followed his vocation long, he may rejoice to know his own pupils are filling places of trust and honor; if not, he perceives traits of character and scholarship moulded under his hand which will not fail to qualify them for such situations.

5th. The Teacher enjoys the grateful remembrance of his pupils and their friends. In pleasure thoughts of a kind teacher makes a pupil's heart warmer; in sickness and suffering the love of an endeared preceptor comes stealing over the senses, easing his pain; when and wherever he goes, or however employed, his thoughts oft revisit scenes which occurred at the school of his youth, and gratitude towards an affectionate teacher fills his heart. I have seen a parent take the teacher of his child by the hand, and heard him say, "I can not express the gratitude I feel for what you have done for my child, not only in cultivating his intellect but in making him truly thoughtful. He will sit by my side, and with tears of tenderness tell of your teaching him of the Saviour. I thank you, and shall never forget your hallowed influence."

6th. The faithful Teacher is doing his Heavenly Father's business. The Teacher not only proceeds to discern the natural capacities of his pupils, to ensure the culture of mind, the moulding of behavior, tempering of the affections, to quickening and exciting observation and practical judgment, but he does that which must knit and consolidate all the rest. He timely instils the principles and seeds of religion. He watches daily, and improves every opportunity to cause this seed to take lodgement in the heart. As the Saviour swayed a multitude by a look, so may the teacher, if he possesses the spirit of that Saviour, see reflected in the faces before him "joy and gladness." He may raise their thoughts heavenward, prepare the heart for universal love to be planted in it, encourage them to bear with sweetness and resignation trials common to all, and teach their young faith to lay hold on future life; and like those whom Christ bade "go teach," his pupils, catching the heavenly spirit depart with zeal to win others to happiness and heaven.

His charge is ever in his heart. He prays with them, and often seeks a solitary place to pour out his soul for their welfare, for their

eternal safety; and he will not lose his reward, for "He that turneth many to righteousness shall shine as the star in the firmament, for ever and ever."—*Miss Root in the Connecticut C. S. Journal.*

2. THE BENEFITS OF CLASSICAL EDUCATION.

The following extracts are from an address delivered by the Rev'd Dr. Lewis of Brockville at the Convocation of Bishop's College, Lennoxville, C. E., on the 30th June last. If there is one characteristic which marks the people of England more definitely than another, it is this—that they are a practical people; so that we may assume it as a fact that the system of classical education must have a practical tendency, or it would long since have been exploded in Great Britain. Never was a greater mistake than to suppose an incompatibility between a classical and a practical education. On the contrary, they are convertible terms. Have we not a remarkable illustration of the power of classical training in fitting a man for the most practical avocations of life, in the fact that he who now leads the oratory of the House of Commons, and lately as Chancellor of the Exchequer managed the finances of Great Britain, could find time among his many duties to write a work on the Homeric age, which henceforth takes the position of a standard authority with every scholar who desires to appreciate the greatest classic of antiquity. This is a species of illustration that I wish to dwell on because who can deny that it is practical. Who can require a more practical training than the man who aspires to regulate the complicated machine of the Exchequer, and is it not full of significance that the last three financial Ministers of England have been distinguished alike for practical ability in finance and accurate classical attainments. I have alluded to Mr. Gladstone. Let me remind you of the fact that his successor, Sir Cornwall Lewis is distinguished for his work on the "Credibility of Ancient Roman History," while the writings of the present Chancellor, Mr. Disraeli, prove that even light literature can charm most when imbued with a classical spirit. Is it not a practical blessing to be able to write with the easy grace of a Macaulay on modern British History, and yet that highly favored writer would perhaps never have attained to such excellence of style in treating of comparatively recent times had he not been inspired in his youth with the feelings and tastes which display themselves in his "Lays of Ancient Rome." Indeed there seems to be some strong affinity between classical literature and finance—enough, at all events, to quash any alarm in this country, lest classical pursuits should obstruct the acquisition of wealth. Need I remind you that the greatest historical work of the present day, and that work a history of Greece, has emanated from the pen of a London baker—and now celebrated George Grote.

"'Tis true that classical attainments are not prized in America—that they are not as at home the ladder which has raised so many from the very humblest position in life to the very highest attainable in either Church or State; still there are practical results flowing from a classical education which are confined to no country or climate. It may appear paradoxical, yet it is strictly true that the best classical scholar will invariably be the best English scholar also. An acquaintance with the structure of the Greek and Latin languages will give a purity of expression, a purity of style, and a terseness of diction, which he who would excel in our mother tongue can obtain in no other ways effectually. It is reported that the Great Lord Chatham attributed his marvellous mastery over the English language to the fact that he had accustomed himself to translate passages from classical authors into English, never desisting until the exact word suggested itself to his mind, until at last he acquired such facility of expression that the best term to express the idea in his mind never failed to suggest itself. The very fact of early discipline, such as a classical education requires, affects the character for life. The very difficulties of acquiring classical knowledge call forth an energy of mind that seldom fails to leaven the character through life. The severity of the study, while it gives an exactitude of thought scarcely less remarkable than mathematical knowledge, has this advantage in addition, that it supplies purity of language and facility in composition. And here perhaps it would be well to allude to an error widely prevalent, viz: that the classics cannot be the best models for composition, because they are languages of the world's infancy, and are vulgarly styled the dead languages. Now I would not be thought to depreciate modern languages; but still, as it is an undeniable fact that the votary of fine art, who in the present day aims at perfection in architecture, statuary or painting, must now wander to the classic ground of Italy and Greece for his models, so I believe that he will never win a place among English classics who has not imbibed the spirit and felt the beauty of classics now 2000 years old. Dead those languages may be called; but "they are not dead, but sleep." And here another great advantage derivable from classical literature suggests itself. I allude to the liberality of mind and the largeness of views which it engenders. It counsels to a knowledge of history. Multitudes make it their boast that they live in an age of extraor-

dinary improvement—the boast implying that they have a knowledge of the past, because a certain amount of information is requisite when we would trace the increasing knowledge of mankind. To appreciate the wonders of our day, we must be able to contrast them with the achievements of the past; and what a field of exploration is here opened to the enquiring mind? What an inducement to the study of history! If we remain ignorant of the past, there will be danger, lest, in our supposed pre-eminence, we withhold from the giants in erudition, who adorn the annals of the past, the honor due to their names. The study of classical literature is the best antidote to such illiberality, and he alone who has read the great authors of antiquity can occupy the true station of arbitrator between the ancient and the modern. But I fear lest I may prove tedious, were I to enumerate all the inducements to classical study. There is one more honoured which should not be omitted, and it is this: that not only is independence of thought one result, but a love of civil liberty is another. It has been remarked that the spirit of Englishmen, which brooks neither indignity nor tyranny, is in a great degree attributable to the system of classical education for so many centuries in existence. I need not illustrate this position. I would only just remind you of the super-human power of poetry to rouse the soul to exertion for liberty; and if we select two English poets who may be said to have obtained the highest place as writers, we instinctively recall the names of Milton and Byron. Both alike breathing the fire of poetry and of classical erudition, each stimulated to save the liberties—the one those of his native country, and the other those of that land which fired his imagination when he wrote the Isles of Greece, &c. But I must not forget that this subject of classical education has special claims on Divinity students. I can hardly realize to myself the idea of a Christian scholar who does not love to acquaint himself with those languages which Patriarchs and Apostles made the vehicle for communicating the Will of God, and which the Saviour of the world honored by speaking. We can realize the enthusiasm and intensity of interest with which a pilgrim to Mount Zion is agitated when he gains the first glimpse of those scenes which are "the joy of the whole earth."—Should not the Christian scholar feel something of like interest as he reads and pronounces the language which conveyed to the world the sayings of God Incarnate? Hebrew and Greek are the languages which God delighted to honor, and shall not the Christian linguist feel it a privilege to interpret what was (as it were) written and engraved by the finger of God? If the marvellous flow of our authorised version rivet with delight the English scholar, what sensations must the original itself produce? It may, perhaps, be a slight exaggeration to say, that what the Greek Iliad is to Pope's translation, the same will the original Scriptures appear to be when compared to our English version; and the more it is studied, the more will it be appreciated, until the conclusion is obvious, that the oldest classic in the world is the noblest specimen of sublimity in style. A thorough classical scholar will never dissever a religious from a secular education, and this is no slight encouragement to exert ourselves in creating a taste for the classics. A classical scholar *knows* what is the result of the highest intellectual superiority without religious feeling. He can tell how nations, gifted with philosophy and science, could not save themselves from decay. The literature, the luxury and refinement of antiquity only precipitated the fall of the nations among which they flourished so eminently. Yes, the classical scholar knows that the world by wisdom knew *not* God, and to educate the intellect at the expense or the neglect of the heart and affections, is to put into man's hand a glittering sword, without any motive to use the weapon aright. The first man who ever combined the character of the christian and the classical scholar was St. Paul. His education had been classical, as appears from the familiarity with which he quotes Cratus, Epimenides and Meander; and whether he addressed the polished Corinthians or the refined Athenians, his tone was ever the same. He traced the wickedness of their lives to the worship of an "unknown God," and warned them that as their knowledge was un sanctified by religion, so their "hearts were darkened," and as "they did not like to retain God in their knowledge, God gave them over to reprobate mind." The reverend gentleman proceeded to dwell at length on the pleasurable sensations arising from classical knowledge, and concluded by describing how happily the idle hour or vacant holiday may be spent in learning acquaintance with the classics, excusing himself for so warmly asserting the claims of the classics on scholars of taste, by quoting from Horace those lines of censure on one who does not take a friend's part (and to him the teaching of his *alma mater* had indeed proved a friend)—

Anicum,
Qui non defendit, alio culpante, solutus
Qui captat risus hominum famamque dicacis,
Hic niger est hunc tu, Romane, caveto.

3. THE VALUE OF OBSERVATION.

BY BENN PITMAN.

"Observation, imitation! the groundwork of all art! The primary

elements of all genius! Not there, indeed, to halt, but there ever to commence. What remains to carry on the intellect to mastery? Two steps—to reflect, to produce. Observation, imitation, reflection, reproduction. In these stands a mind complete and consummate, fit to cope with all labor, achieve all success."

A noteworthy essay, in a few words, by Sir E. Bulwer Lytton. Observation! Train your eye to look at things critically, until you are able to see them with your inward as well with your outward eye, and do so, if possible, without acquiring the habit of knitting your brow and frowning at those things you think worth looking at. Clear vision, and the memory of sight, have more to do with drawing than you may at first imagine. Those who observe accurately, and can remember, have no difficulty in drawing what they have seen. In my intercourse with men I have been surprised, and often amused, at the want of skill in drawing the simplest objects, and those too which have been seen a thousand times. How many grown up people, of all you know, think you, are able to draw a human face, or a profile of one, that is not shockingly idiotic?

This lack of skill is due more to the want of observation, than to the want of ability to draw what has been clearly seen. Louis Agassiz, the celebrated naturalist, though no artist, has a very happy faculty of reproducing objects on the blackboard. While explaining some phenomenon of animal existence, he will, with a piece of chalk, draw on the blackboard an admirable outline of the object on which he is conversing. So thoroughly are the forms which he has seen, or on which he has thought, fixed in his mind, that he will draw a deer, for instance, by commencing at the tip of the nose, and, proceeding from that point, trace the complete outline of the animal, without once lifting his chalk, till he returns to the point from which he started;—a feat I have never seen accomplished by any artist.

Very lately I wished to have a wheel cast for a new contrivance I was constructing, and I was taken by a machinist through the shop, in which was stored his stock of 'patterns.'

Among hundreds of beautifully finished patterns there was a rough looking cogwheel about a foot in diameter. Instead of being made, like all the others, of a hundred separate pieces, beautifully jointed, and as smooth as glass, it had evidently been hacked out of a solid piece of soft wood with a jackknife. The master smiled as my eye rested on this ill-shapen block. 'Some fool from the country sent that for us to make a casting from it.' 'A man must indeed be senseless to think that a casting could be made from this.' 'But was it not sent,' I suggested, 'because the person could more easily whittle out a cogwheel than draw one?' 'That never occurred to me,' replied the master, 'but I think it very likely.'

V. Biographical Notices.

(No. 9.)

1. THE LATE HON. W. MORRIS.

The subject of this brief notice was born at Paisley, Scotland, on the 31st October, 1786, and was in his 72nd year at the period of his decease.

He emigrated with his parents, who were then in comfortable circumstances, from Scotland to Upper Canada, in 1810. Three years afterwards, his father having settled in this city, was engaged in business; but having lost a homeward-bound ship in the Straits of Belle Isle, and no part of the cargo having been insured, owing to the carelessness of an agent, and having sustained other heavy losses, he was compelled to close his business in Montreal, and retire to a farm near Brockville.

In 1809, his father died, leaving large debts in Montreal and Scotland, and Mr. Morris continued at Brockville with his brother and the younger members of the family, helping to support them by his exertions, till the war of 1812, with the United States, commenced, when he left his business and joined the militia flank companies as an Ensign, having received his commission from Gen. Brock. In October of that year, he volunteered, with Lieut.-Colonel Lethbridge, in the attack of the British forces on Ogdensburg, and commanded the only militia gunboat that sustained any injury, one man having been killed and another wounded at his side by a cannon shot. In 1813, he was present and took an active part in the capture of Ogdensburg, having been detached in command of a party to take possession of the old French forts then at that place, and nobly performed the duty. His comrades in arms, some of whom are still living, speak in high terms of his soldierly bearing, and of the affection with which he inspired his men during the early portion of his career. He continued to serve till 1814, when a large body of troops having arrived in the Colony from the Peninsular, he left the militia service, and returned to Brockville, to assist his brother in the management of their business there.

In 1816, he proceeded with the military and emigrant settlers to the military Settlement near the Rideau, and there commenced mer-

cantile business, at what is now the substantial and prosperous Town of Perth, but which was then a wilderness. He continued for some years to bestow his active attention on the mercantile business conducted at Perth by himself, and at Brockville by his brother, the late Alexander Morris, Esq.; and having prospered, in 1820 an incident took place that marked the character of the man, and was an index to all his future career. In that year, he and his brother received two handsome pieces of plate from the creditors of their late father in Glasgow, for having voluntarily, and without solicitation, paid in full all the debts owing by his estate. Such respect for a father's memory indicated a high-toned rectitude, that could not fail to command success.

In this year, also, the political career of Mr. Morris commenced, he having been elected by the settlers to represent them in the Provincial Parliament. He soon took an active and prominent part in that assembly, and in 1820 took one of the leading steps in his political life, when he moved an address to the King, asserting the claim of the Church of Scotland to share of the Clergy Reserves under the Imperial Statute 31 Geo. III., cap. 31. With no hostility to the Church of England, but yet with a sturdy perseverance and a strong conviction of right, he urged the claims of his Church, basing them upon the Act of Union between England and Scotland. The Colonial Government resisted his pretensions, but sixteen years afterwards, the twelve Judges in England decided in effect that Mr. Morris was right. In 1835 he was elevated for the sixth time consequently to Parliament for the County of Lanark, and on this last occasion was not a candidate. In 1836 he was called to a seat in the Legislative Council of Upper Canada.—In 1837 he proceeded to the Colonial Office, Downing Street, London, with a petition to the King and Parliament from the Scottish inhabitants of both Provinces of Upper and Lower Canada, asserting their claims to equal rights with those enjoyed by their fellow-subjects of English origin. He was selected for this mission by a meeting of delegates from all parts of the Province held at Cobourg. Subsequently he received from the Scottish inhabitants of the Province a handsome piece of plate, bearing an appropriate inscription as a token of their appropriation of his public services.

On his return to Canada, in 1837 and 1838, he was actively engaged during those years in drilling and organizing the militia of the County of Lanark, of which he was the senior Colonel, and twice sent to the frontier detachments of several regiments, going in command on one occasion himself. In 1841 he was appointed Warden of the district of Johnstown, under the new Municipal Council Act, and carried the law into successful operation.

In 1844 he was appointed a member of the Executive Council, in Sir Charles Metcalf's Administration, and also Receiver General of the Province. He was a most efficient departmental officer, and proved himself, as Lord Metcalf described him,—"a valuable public servant. While Receiver General, he introduced into that department a new system of management, and paid into the public chest, while he held the office, £11,000 as interest on the daily deposits of public money—an advantage to the public which had never before been attempted.

In 1845 Mr. Morris resigned the office of Receiver General, and was appointed President of the Executive Council, the duties of which office he discharged with great efficiency and vigor. In 1848, on the retirement of the Administration of which he is a member, he retired into private life, with health impaired by the assiduous attention he had given to the public duties. Till the year 1853, when he was seized with the disease which eventually terminated his career, he continued, when his health permitted, to take an active part in the Legislative Council.

A clear, logical, vigorous speaker, he was always listened to with respect, and having a very extensive knowledge of Parliamentary law and practice, he did much to establish the character of legislation in that branch of the Legislature, of which he was long a member, and owing to his high moral character and firm adherence to principle wielded a very beneficial influence on that body. Few public men pass through life, and carry with them more of public confidence than Mr. Morris. He has left a bright example of spotless integrity to us in these times. In private and public life, he has shown himself to be the noblest work of God—an honest man—and now that full of years and honor, he has after five years of patient suffering and Christian resignation entered upon his rest. He has left the fragrant memories of his busy active career, as an example and incentive to men in public and private positions, to follow his footsteps.—*Montreal Gazette.*

2. DEATH OF THE MOHAWK CHIEF.

On the 28th ultimo, between the hours of one and two o'clock, a. m., De-yonh-he-gonh, or Jacob Martin, a Mohawk Chief, died of consumption, at his residence in the township of Tuscarora, in the 57th year of his age.

In drawing our pen to pay homage to the illustrious dead, we feel

our inability to do the justice which the many noble characteristics of the late Mohawk Chieftain demand. The name and person of the deceased are well known to those who have any acquaintance with the Six Nations. For the last twenty years, he has played a conspicuous and important part in affairs of the Indians of the Grand River, ever manifesting by his public action, a deep and heartfelt sympathy for the well being and prosperity of his people. Wherever and whenever the good of the Six Nations demanded his presence and service, there might he be found contending manfully for the interests of others—

“God gave him reverence of laws,
Yet stirring blood in freedom's cause,
A spirit to his rocks akin—
The eye of the hawk and the fire therein.”

He possessed an iron will, and unlike the generality of Indians, the energy of a Bonaparte. These, coupled with sound practical common sense, refined by the holy influence of christianity and of strict moral virtue—made him a man of usefulness not only to himself but to society at large. Although he was never called upon to vindicate the honor of Her Majesty Queen Victoria, nor to defend his country from foreign foes, yet he ever showed, especially during the turmoil of '37-8, that the national enthusiasm for their Queen, which pervades the bosom of every Mohawk, was not wanting in his manly and brave heart.

We, of the Six Nations, cannot but regard the demise of De-yonh-he-gonh as a national loss. In his death the Six Nations have lost an able defender of their interests, a firm and respected opposer of all things averse to their well-being.

The Indian department saw and appreciated the worth of the deceased by employing him as Interpreter of the Six Nations, in which office, he continued for twelve years—and suffice it to say, that while he held the office, the duties pertaining to it were faithfully and satisfactorily discharged.

The public, who knew the virtues and worth of the deceased will readily admit that Jacob Martin, than whom was no other Indian so free from the vices to which we are subject, stood higher in their estimation than any other Indian of the Six Nations.

De-yonh-he-gonh was a member of the Church of England, under the administrations of the Rev. A. Nelles, and during a period of twenty years has been employed as the church Interpreter.

He died a peaceful death. As in that solemn midnight-hour we stood over his feeble form we seemed to hear the words—

“Hark! they whisper! angels say
Sister spirit, come away!”

And without a struggle the immortal De-yonh-he-gonh passed from this vale of tears to the hidden scenes of the spirit land—to the “hunting grounds of the Great Spirit.” Truly a “great man in Isarel hath fallen.”

His last words were, in quoting the passage,—“I am the way, the truth, and the life; no man cometh unto the Father but by me.”

He has ceased from labor, to enjoy his reward in a happier and a holier sphere.

“And let him slumber in the soil,
Which gave his fathers birth;
He has closed his day of battle-toil,
And his course is done on earth.”

—Brantford Courier.

O. P. M.

VI. Miscellaneous.

1. A SONG OF JOY FOR THE TELEGRAPH.

I.

Why are our hearts so glad to day?
What means this common joy?
The mother o'er the narrowing bay
Sends greeting to her boy.

II.

Beneath the broad Atlantic main,
Despite the tempest wild,
Completed is th' electric chain
From parent unto child.

III.

Ring out ye bells a merry strain,
Ye guns your voices raise,
Till earth takes up the glad refrain
And swells the hymn of praise.

IV.

Long absent from the homestead hearth,
The son returns at last,
In all the pride of noble birth
And memories of the past.

V.

“Henceforth,” he says, “as age creeps on,
Lean thou upon my arm;
Twill serve thee when thy strength is gone,
And shield thee from all harm.

VI.

In infancy you nurtured me,
And now I can repay
Part of the debt I owe to thee,
And thus begin to-day.

VII.

The band that binds us heart to heart
To day is closer wove;
And forth upon their errands start
God's messengers of love.

VIII.

And as we view the triumph grand,
By science nobly won,
Will not the mother grasp the hand
Extended by the son?”

IX.

Then ring ye bells a merry strain,
Ye guns your voices raise,
Till earth takes up the glad refrain,
And swells the hymn of praise.

Cambridge, 6th August, 1858.

2. THE DIFFERENCE OF TIME.

The success of the Atlantic cable has called attention to the difference of time in various cities in different parts of the world. A table prepared some time since gives the following interesting information:

When it is 12 o'clock high noon at New York, the time is as follows at the stated places:

| | A. M. | P. M. |
|--------------------------|----------|----------------------------------|
| Newark, N. J. | 11.59.24 | Madrid 4.40.32 |
| New Brunswick | 11.58.08 | Edinburgh 4.43.16 |
| Morristown | 11.58.00 | Liverpool 4.44.36 |
| Paterson | 11.59.20 | London, Eng. 4.55.42 |
| Plainfield | 11.58.12 | Geneva 5.20.42 |
| Princeton | 11.57.16 | Turin 5.26.52 |
| Trenton | 11.57.00 | Bremen 5.31.20 |
| Burlington | 11.56.32 | Hamburg 5.35.48 |
| Easton, Pa. | 11.55.00 | Florence 5.41.24 |
| Alton, Ill. | 10.12.28 | Rome 5.43.03 |
| Buffalo | 11.58.32 | Stockholm 6.08.20 |
| Charleston | 11.36.40 | Athens 6.31.08 |
| Cincinnati | 11.16.18 | Constantinople 6.51.44 |
| Dubuque | 10.53.00 | St. Petersburg 6.57.20 |
| Harrisburgh | 11.48.44 | Sebastopol 7.10.28 |
| Macon, Ga. | 11.21.16 | Jerusalem 7.17.24 |
| Key West, Fla. | 11.28.52 | Calcutta 10.49.56 |
| New Orleans | 10.55.40 | London, U. C. 11.29.38 |
| Philadelphia | 11.55.22 | Toronto 11.34.40 |
| Salt Lake City | 9.27.40 | Hamilton 11.38.40 |
| Oregon City | 8.46.40 | Kingston 11.47.30 |
| Honolulu, S. I. | 6.24.08 | Albany, N. Y. 12.01.08 |
| | P. M. | Montreal 12.01.44 |
| Dublin | 4.30.56 | Quebec 12.08.40 |
| St. Helena | 4.33.40 | Lubec, Me. 12.28.00 |

The difference of time between the extreme east and west points of the United States is three hours, fifty minutes. When it is Monday noon at New York, it is 6.50 a.m. Tuesday at Tahiti, and between 12 and 1 a.m. of Tuesday at China. In the China Sea, between Singapore and China, it is midnight when it is noon at New York.

The time at St. John's, Newfoundland, is 1.26.08 p.m., and the difference in time between Trinity Bay and Valentia Bay is about two hours and forty-eight minutes.

3. THE SUFFERINGS OF A MAN OF GENIUS.

Hon. Joseph Holt, Commissioner of Patents, in reporting in favor of extending Goodyear's India rubber patent, gives the following interesting particulars of the poverty endured by Goodyear and his family while prosecuting his experiments:—

“From the first moment that the conception entered his mind, until his complete success—embracing a period of from sixteen to eighteen years—he applied himself unceasingly and enthusiastically to its perfection, and to its introduction into use, in every form that his fruitful genius could devise. So intensely were his faculties concentrated upon it that he seems to have been incapable of thought or action upon any other subject. He had no other occupation, was

inspired by no other hope, cherished no other ambition. He carried continually about his person a piece of India rubber, and into the ears of all who would listen he poured incessantly the story of his experiments and the glowing language of his prophecies. He was, according to the witnesses, completely absorbed by it, both by day and night, pursuing it with untiring energy and with almost superhuman perseverance.

"Not only were the powers of his mind and body thus ardently devoted to the invention and to its introduction into use, but every dollar he had or could command through the resources of his credit or the influences of friendship, was uncalculatingly cast into that seething caldron of experiment, which was allowed to know no repose. The very bed on which his wife slept, and the linen that covered his table, were seized and sold to pay his board, and we see him with his stricken household following in the funeral of his child on foot, because he had no means with which to hire a carriage. His family had to endure privations almost surpassing belief, being frequently without an article of food in their house, or fuel in the coldest weather—and, indeed, it is said that they could not have lived through the winter of 1839 but for the kind offices of a few charitable friends. They are represented as gathering sticks in the woods and on the edges of the highways, with which to cook their meals, and digging the potatoes of their little garden before they were half grown, while one of his hungry children, in a spirit worthy of his father, is heard expressing his thanks that this much had been spared to them.

"We often find him arrested and incarcerated in the debtors' prison, but even amid its gloom his vision of the future never grew dim, his faith in his ultimate triumph never faltered. Undismayed by discomfitures and sorrows which might well have broken the stoutest spirit, his language everywhere and under all circumstances, was that of encouragement and of a profound conviction of final success. Not only in the United States did he thus exert himself to establish and apply to every possible use his invention, but in England, France and other countries of Europe, he zealously pursued the same career. In 1855 he appeared at the World's Fair in Paris, and the Golden Medal and the Grand Cross of the Legion of Honor were awarded to him as the representative of his country's inventive genius. Fortune, however, while thus caressing him with one hand, was at the same moment smiting him with the other; for we learn from the testimony that these brilliant memorials passed from the Emperor and reached their honored recipient, then the occupant of a debtor's prison, among strangers and in a foreign land—thus adding yet another to that long sad catalogue of public benefactors who have stood neglected and impoverished in the midst of the waving harvest of blessings they had bestowed upon their race."

4. THE WONDERFUL KEY.

Jane was the most tiresome and wayward child in her school. She quarrelled with her companions, disobeyed her teachers, and behaved improperly. No one could manage her. The more she was scolded and punished, the worse she became. At length the master decided that she must be expelled. She got no good herself, and her bad example injured the others; it would be better that she should be dismissed. He called Jane to him one afternoon, and gravely told her his intention of sending her away.

"I don't care," said Jane, angrily. "I hate the school, and I shall be glad to go!"

He endeavoured to reason with her upon the ingratitude and sinfulness of her conduct. As he was speaking, one of the teachers, whom we shall designate Miss Gray, came very near them to fetch a book which she wanted. Of course she did not pass without Jane's quick eyes seeing her. The girls sullen demeanor instantly changed. A fresh thought seemed to strike her, and looking up at the master she said, hastily, "Well, I'll promise to be a better girl if you'll put me into Miss Gray's class."

"How will that make you a better girl, Jane?"

"I don't know, sir. But I like her, and I'll do what she tells me."

"And why do you like Miss Gray, Jane?"

"Because she's the first teacher that's ever spoke kind to me, She helped me to get my bonnet-strings out of a knot this morning, when I wanted to undo them because it was so hot; and she was so pleasant over it. She smiled and said, 'It only wants a little patience, Jane.' Oh, she is such a nice lady! If you would only let me get into her class!"

The result was that Jane went into Miss Gray's class, where she soon fulfilled the promise she had made of becoming a better girl. She grew so tractable, and industrious, and obliging, that every body in the school, the grave master not excepted, was perfectly astonished. "We must learn your secret," they said to Miss Gray.

"I have no secret but love," was her reply. And that "love" was the key which had opened Jane's heart. She loved her teacher; and from loving her teacher, she learned to love her Saviour. Years have rolled away since then; Miss Gray has finished her labors, and entered into her rest; and Jane—the once troublesome, self-willed, unman-

ageable school-girl—is now the active and devoted wife of a faithful home missionary, winning the affections of children by the same irresistible charm which early attracted her own.

Take encouragement, dear teacher, and resolve to make use of this magic key. Cultivate an affectionate attractiveness of manner. Strive to "be gentle unto all, apt to teach, patient; in meekness instructing those that oppose themselves;" for in a world like ours, where sin has planted not only sadness but suspicion in the mind, and natural pride and independence guard with careful jealousy the portals of the heart, it needs a tender and considerate touch to elicit another's confidence and sympathy. "He that winneth souls is wise." Let your children feel that you really love them, and they will soon reciprocate your love; and when you have secured their warm affections, you have accomplished much. For there is little hope of our doing the young any permanent good, unless we have first found out the way to reach their hearts; and this is one reason, we are inclined to think, why our teaching so often fails—it emanates rather from a mind imbued with a sense of duty, than gushes forth from a heart overflowing with love. Our pupils recognise us as their teachers: but do they look upon us as their friends?

"Mother," said a Sunday scholar one day to his mother, "I don't like my new teacher half so well as my old one."

"Why not, Robert? Isn't he as clever?"

"Oh, yes, mother; he talks much grander than Mr. B— used to do, and he seems to know all that is in the Bible; but some how I don't get so interested in what he teaches us, and I don't feel so inclined to mind it."

"How is that, Robert?"

"Why, mother, he never looks a bit pleasant at us, and he never says a word to us except about our lessons. I'm sure I could never tell him if I was in any sort of trouble, for I don't think he understands just how boys like us feel; but I could have gone to Mr. B— if I had wanted to, as easy as I could go to you, mother: he was a real gentleman, Mr. B— was, mother; but for all that, he was the best friend I ever had. I wish he would come back again."

It is very evident that Robert's old teacher had got hold of the right key.—*Christian Treasury.*

VII. Educational Intelligence.

CANADA.

— GRAMMAR SCHOOL PRIZE SCHOLARSHIP. —

To the Editor of the Northern Advance.

SIR,—Will you allow me to give publicity, through the *Advance*, to the following plan, which I think will be ultimately productive of considerable good:—It seems to me that as the scholarships of our University serve at once to point out and to promote the improvement of the Grammar Schools by giving rise to an honorable rivalry between pupils and masters, so the Grammar Schools, occupying an intermediate place, might be made to produce a like good effect upon those in the grade below them. With the double object, therefore, of causing a healthy emulation to spring up among the Common Schools of this County, and of placing the Grammar School over which I have charge in its proper position as a County Institution, I would propose the following prizes for competition, namely:—Gratuitous Board and Education for one year, at the Grammar School, to that boy who shall answer best from among the candidates who may offer at the annual examinations in December, on the annexed conditions.

Candidates must be at least twelve years of age.

They must have been in regular attendance at one or more of the Common Schools of this County for at least twelve months previous to the examination.

They must bring satisfactory testimonials of good conduct from the masters under whom they have been instructed.

They must give notice of their intention to compete at least one fortnight before the day of examination.

They must be willing to submit to the regulations established for boarders in every other respect than that of payment.

The first examination will take place in December next, at the Grammar School, and sufficient notice will be given of the day in the Barrie papers.

The subjects for examination will be: Sullivan's English Grammar and Geography; Arithmetic, to Vulgar and Decimal Fractions, Simple and Compound Proportion, inclusive; Reading; Writing, from dictation.

I have purposely made the standard for this year very low, as the notice given is but short. In addition to the above, a knowledge of Euclid, Book I, and the first four rules of Algebra, will be required for 1859.

I remain, your obedient servant,

W. F. CHECKLEY, Head Master, Barrie Grammar School.

— TORONTO CITY SCHOOLS EXAMINATION.—The examination of the Free Schools of Toronto took place yesterday. A number of the schools were decorated with flowers and evergreens, and the children were all dressed in holiday attire. There was a large attendance of the parents of the children, and those who take an interest in the education of the young, many of the buildings being crowded almost to excess. The proficiency of the children in their studies elicited many encomiums from those present and evinced, to a great extent, the care which had been taken on the part of the teachers. The various schools were visited by the Superintendent, Rev. Jas. Porter, and the pupils were briefly examined by him. After the days' proceedings were brought to a termination, it was announced that the vacation would extend to Monday, the 30th August next. The boys received the announcement apparently with great satisfaction.

— BRADFORD COMMON SCHOOLS.—On the 29th ult, an examination of the scholars of Bradford Common School was held in the Presbyterian Church in that town. The answering of the children (one hundred and five in number) was exceedingly satisfactory, much care, it was manifest, having been taken in their training. A large number of recitations were also delivered by the children, which gave much pleasure to the audience. At the termination of the proceedings it was moved by Mr. James Drury, seconded by the Rev. J. Fletcher [Ch. of Eng.], and unanimously resolved: "That the thanks of the meeting be voted to Mr. Samuel D. Mishaw, teacher of the Common School, Bradford, for the general efficiency evinced by the scholars at the half-yearly examination, and that Dr. Allen, Secretary to the School Trustees, do communicate the same to Mr. S. D. Mishaw." Mr. Fletcher, in seconding the motion, remarked, that although previously adverse to the Common School System, he had become a convert, seeing manifested the fruits of that system so effectually and faithfully carried out by Mr. Mishaw.

LAVAL UNIVERSITY.—We beg to acknowledge the receipt of a copy of "*Annuaire de L'UNIVERSITÉ-LAVAL pour l'année Académique 1858-59*," which title we may venture to translate "Laval University Calendar" for the ensuing collegiate year. Besides a simple calendar of the days of the year, this pamphlet contains lists of the University staff, the names of the Professors and students in the several faculties, tabular views of the course of studies, and the hours of attendance at the various lectures. We also find satisfactory explanations regarding the libraries and museums, with the rules and regulations to be observed by all who have recourse to them, as well as many interesting details concerning the organization of the University, the classes, degrees, discipline and examinations. The building set apart for the board and lodging of students in Medicine and Law, whose parents do not reside in the city, is capable of affording sufficient accommodation to more than fifty; the annual charge for board and lodging during the three terms amounts to only \$130. The Calendar very properly concludes with lists of the Directors, Professors, Teachers, and Pupils belonging to the Seminary of Quebec, and a programme of the course of studies pursued at this genuine Canadian institution, which was established nearly 200 years ago. Any person desirous of obtaining useful particulars with respect to the University and the Seminary, may be appropriately referred to this annual Calendar, very recently published by special authority.

BRITISH AND FOREIGN.

THE QUEEN'S COLLEGES IN IRELAND.—A weighty blue book just issued gives the report of the Commissioners on the progress and condition of the Queen's Colleges at Cork, Galway, and Belfast. The report testifies to the progress and present success of these useful institutions, to the merit of which ample testimony has been borne by the celebrated Irish novelist, Mr. W. Carleton. The Commissioners recommend the abolition of the Professorships of the Celtic languages. The great majority of the students in the colleges belong to the middle classes of society, and in 1857-58 there are registered 155 students, of whom 109 are matriculated. The total number of students from 1849-50 to 1857-58 is 1,768, representing 1,686 individuals. Certain obstacles to the success of the colleges are noticed, but it is admitted that their educational progress is most satisfactory, as proved by the success of many of their *alumni* at the writerships in the India Company's service. The good done by the colleges, however, cannot be estimated merely by the number of the students, or the successful candidates whom they may and do send to the great public contests of the educated youth of the empire.

— THE ORIGIN OF YALE COLLEGE.—In 1700 ten clergymen met at Branford, each bringing in a few books under his arm. Placing these on

the table in Parson Russel's study, each said solemnly, "I give these books for the founding a college in this colony." A century and a half have gone by, and Yale College counts her books and her graduates by thousands.—*Harper's Magazine.*

— NEW YORK STATE TEACHERS' ASSOCIATION.—In the early part of August this association met at Lockport. About three hundred were present at the morning session, and each train brought additional numbers during the day. The association was called to order at half past ten o'clock, and was welcomed by Governor Hunt in an exceedingly chaste and appropriate address. After a timely allusion to the fact that when the Erie canal was commenced, the site of Lockport was a wilderness, as evidence that natural obstacles cannot stand before the energy of human genius, and a glance at the marvellous progress of the Republic in all the elements of national prosperity, Governor Hunt continued:—

The education of its children should be deemed the first concern, as it is the most sacred duty, of a free state. The moral and intellectual development of the people constitutes the vital strength and the true glory of a state. Education forms the only safe and durable basis for a system of popular government. All history attests that a nation deficient in intelligence and moral culture cannot preserve free institutions. An ignorant people are unfit for self-government. This view of the subject would of itself be sufficient to fill the mind of every enlightened patriot with a just sense of the importance of that noble cause which the Teachers' Association aims by its efforts to strengthen and uphold.

I am most happy, Mr. President, in having an opportunity like the present to express the sentiments of respect and gratitude with which I always regard the earnest, devoted, intelligent teacher of childhood and youth. What employment can be more ennobling, what pursuit more useful to mankind, what mission more exalted in the sight of Heaven? It is, indeed, a sacred trust. To you are committed the most precious interests of society. It is your office to discipline the intellect and expand its powers, to inform the conscience, regulate the passions, direct the impulses, purify the aspirations, and mould the character of the rising generation; to form the future citizen by implanting the seeds of knowledge and virtue in the minds of our youth, who will soon be our successors on the stage of action; and to diffuse the spirit of Christian morality, embodied in those sublime precepts which unfold our relations to God and our country, and teach us to love our neighbors as ourselves.

The schoolmaster and the schoolmistress who labor with fidelity in their vocation, are the truest friends of liberty and humanity; their efforts impart new strength and beauty to our political edifice. Would you elevate man to his true dignity in the scale of being discipline his mind, restrain his passions, inculcate benevolence and candor, and inspire him with a love of truth. It must not be forgotten that in a representative system like ours every man by his suffrage wields a portion of the sovereign power, and exercises a direct influence upon the destiny of his country. Let us cherish our schools as the nurseries of freemen, and give the cause of public instruction that zealous support which is due to its pre-eminence and vital importance. Mr. President, you are in a community which appreciates the value of education, and honors the agents by whom its manifold blessings are disseminated. We have observed the generous zeal, the enlightened action, and the successful progress of your association with a friendly interest. This annual assemblage of the instructors of youth cannot fail to exert a salutary influence.

The interchange of views and opinions among those engaged in the same intellectual pursuit is always practically useful. It has done much to simplify our modes of teaching and elevate the standard of learning in our public schools. It has a powerful tendency to promote uniformity in our system of instruction. No teacher can survey this association of his peers without forming a higher estimate than ever before of the true dignity of his profession. To those of the gentler sex I would address a word of caution. It may be somewhat dangerous for them to listen with too willing an ear to the persuasive accents of the schoolmaster, and I submit that it would be discreet to refer all new declarations of sentiments to the gallant Secretary of Public Instruction. In conclusion, permit me to assure you of my sincere wish that your sojourn amongst us may be agreeable to you all individually; that your deliberations may be harmonious and conducive to the advancement of the great cause of popular education.

G. L. Farnham, Esq., the President of the Association, then delivered his annual address, directing the attention of the members to the necessity of graduation in schools, and of educational literature, and other appropriate topics.

VIII. Literary and Scientific Intelligence.

— RESULTS OF THE SCIENCE AND ART DEPARTMENT FOR 1857.—Summing up the general results of the action of the Department during 1857, which have been detailed in the preceding Report, it has been shown that the desire of the public to use the facilities offered by the State for the study of Science and Art is greatly on the increase.

The various Metropolitan Museums and Exhibitions in London, Dublin, and Edinburgh, have been visited by 553,853 persons, being an increase of as many as 186,915 persons on 1856. The visitors to the Botanical and Zoological Gardens in Dublin have been 168,908, showing an increase of 10,222 persons on 1856. The circulating Art Museum has been sent to Stourbridge, Worcester, Liverpool, Glasgow, Paisley, and Dudgee, and 36,024 persons have consulted it. The various Schools of Science and courses of public scientific lectures have been attended by 10,372 students. The total number of students connected with the Schools of Art, or under inspection, has been 43,212, being an increase of 25 per cent. on the numbers returned in June, 1856; whilst the cost of the State assistance, from being an average of £3 2s. 4d per student in 1851, before the reform of the Schools of Design, has been reduced to an average of 13s. 1½d per student, the instruction at the same time having greatly improved and the means for study largely increased.

The success of the removal of the Science and Art Department from Marlborough House to South Kensington, has been so signal as to require some special notice of it.

The number of students in the Art Training School at Marlborough House during the Session ending February, 1858, was 292. The number in the month of last March at South Kensington was 407.

The visitors to the Museum in less than ten months have amounted to 439,997 persons, being nearly five times the average numbers annually that attended Marlborough House. [The numbers for twelve months have been 488,861.] The experiment of opening the Museum in the evening has shown that that is the time most convenient to the working classes to attend public museums. Comparing time with time, the numbers have been five times as great in the evening as in the morning. The provision of somewhat increased space has enabled the Department to be useful to all the local Schools of Art, in the circulation and lending of the articles in the Museum, and the books, prints in the Library. These are no longer metropolitan institutions, but are essentially national in their influence. The South Kensington Museum is the storehouse of the United Kingdom, and every School of Art is privileged to borrow from it any article that is safely portable.

The provisions of increased space has enabled the collections of Art for the first time to be properly exhibited to the public. It has also enabled other collections to be made and properly displayed, and it has been proved that if space be provided by the State, the public are willing to fill it. This is shewn by Mr. Sheepshank's munificent gift of British pictures now properly displayed, by the Animal collection, the Patent collection, the Architectural collection, the Educational collection, and the collection of Sculpture; in all of which the objects have been almost wholly provided by the public.—*From the Lord President's Annual Report.*

— THE CHANGE OF LEVEL IN THE GREAT LAKES.—Chester Dewey, LL.D., of the University of Rochester, states that Lake Ontario is seven inches higher than in October, 1857, when it was the highest that had been known for eleven years. He says there is no regular time of rise or fall in the lakes—no periodical changes of five, seven, or eleven years. Lake Ontario is high or low when or soon after the same fact in Lake Erie, and the fluctuations are about equal, as they are in Lake Michigan. The difference in the level is very rarely four feet in a year, when the waters are at rest. The conclusion he arrives at, after eleven years' observation of the lakes, and of meteorological conditions in their vicinity, is, that the fluctuations of their level depend on the quantity of water poured into the lakes by all the streams which carry off the rain and the melted snow, and upon the amount of evaporation.

— HARVARD COLLEGE LIBRARY.—The Librarian, Mr. John Langton Sibley, submitted to the Library Committee a detailed report of the accessions to the library. By this report it appears that, besides various duplicates, periodicals, newspapers, and catalogues, 2,944 volumes and 3,083 pamphlets have been added to the Public Library since the last annual examination, 10th July, 1857. Of the volumes, 1,563, and of the pamphlets 2,948 were gifts. There have also been received as gifts 11 engravings and 42 maps and plans. For periodicals the library is indebted

(among others) to the editors or proprietors, respectively, of the Canadian Journal of Industry, Science and Art, and the Journal of Education, Upper Canada. The Rev. John Cordner, of Montreal, has given more than 30 pamphlets and 30 volumes relating mostly to Canada, which were accompanied by the large and comprehensive Canada Directory, from the publisher, John Lovell, Esq. The additions to the Library during the year make the total number of volumes in Gore Hall, exclusive of pamphlets, about 77,000, and in all the libraries connected with the University about 120,000.—*Extract from the Cambridge Chronicle.*

— AN INTERESTING DISCOVERY.—We see it stated, upon what may be considered reliable authority, that thirty thousand Christians have recently been found upon an island north of Celebes. It has been rumored for a time that there was there a Christian people, forgotten and forsaken which, however, yet possessed three Bibles, and continued steadfast in the faith. When missionaries first landed on the island, they met with a school teacher and his pupils, who repeated in the Malayan tongue, "As the hart panteth after the water brooks, so panteth my soul after Thee, O Lord." No Bibles were found, but the most precious promises of the Bible written upon the bark of trees. They knew the Apostles' Creed, and the Heidelberg Catechism, and had Christian customs. Twenty churches and schools yet existed. Through the instrumentality of Pastor Heldring, founder of the Magdalen Asylum at Steenbeck, and chief patron of Inner Missions in Poland, four missionaries, who had been educated under the venerable Gossner, were sent out, and three thousand persons baptized. This is certainly a most interesting discovery. The island on which these Christians were found belongs to the East Indian Archipelago. The Dutch have for years had political rule in this region. This may account for the original introduction of Christianity among the people, and for the fact that the Heidelberg Catechism was still found in their possession. But still the particular time and circumstances in which this introduction took place may well challenge special attention, and elicit investigation from those who have the leisure and facilities for prosecuting it.—*German Reformed Messenger.*

IX. Departmental Notices.

PRIZES IN SCHOOLS.

The Chief Superintendent will grant one hundred per cent. upon all sums not less than five dollars transmitted to him by Municipalities or Boards of School Trustees for the purchase of books or reward cards for distribution as prizes in Grammar and Common Schools.

PUBLIC SCHOOL LIBRARIES.

"Township and County Libraries are becoming the crown and glory of the Institutions of the Province."—*Lord Elgin at the Upper Canada Provincial Exhibition, September, 1854.*

The Chief Superintendent of Education is prepared to apportion one hundred per cent. upon all sums which shall be raised from local sources by Municipal Councils and School Corporations, for the establishment or increase of Public Libraries in Upper Canada, under the regulations provided according to law. Remittances must not be in less sums than five dollars.

SCHOOL MAPS AND APPARATUS.

The Chief Superintendent will add 100 per cent. to any sum or sums, not less than five dollars, transmitted to the Department from Grammar and Common Schools; and forward Maps, Apparatus, Charts, and Diagrams to the value of the amount thus augmented, upon receiving a list of the articles required by the Trustees. In all cases it will be necessary for any person, acting on behalf of the Trustees, to enclose or present a written authority to do so, verified by the corporate seal of the Trustees. A selection of articles to be sent can always be made by the Department, when so desired.

ADVERTISEMENTS inserted in the *Journal of Education* for three cents per word, which may be remitted in postage stamps, or otherwise.

TERMS: For a single copy of the *Journal of Education*, \$1 per annum; back vols., neatly stitched, supplied on the same terms. All subscriptions to commence with the January number, and payment in advance must in all cases accompany the order. Single numbers, 12½ cents each.

All communications to be addressed to Mr. J. GEORGE HODGINS, Education Office, Toronto.