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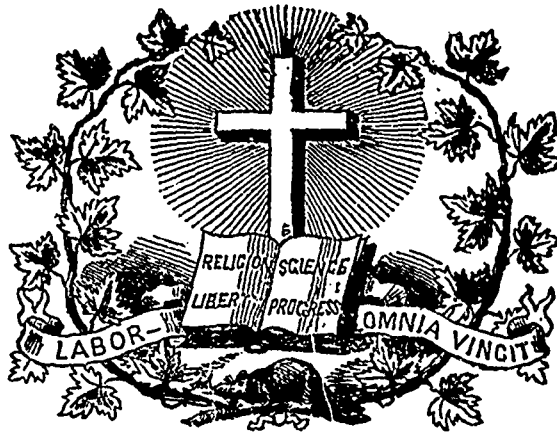
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# JOURNAL OF EDUCATION.

Volume III.

Montreal, (Lower-Canada) October, 1859.

No. 10.

**SUMMARY.**—**CANADIAN HISTORY.**—The Brock monument by H. G. M. Speech of Sir Allan McNab at the inauguration.—Description of the monument.—**EDUCATION:** School days of Eminent Men in Great Britain, by J. F. Timbs, (continued from our last).—Suggestive hints towards improved secular instruction, by the Rev. Richard Davies, A. M., 6th. Arithmetic (continued). 7th. Mensuration.—Summary of hints to teachers, by John Bruce, Esq., Inspector of Schools.—**OFFICIAL NOTICES.**—Notice to Secretaries of Boards of Examiners.—Diplomas granted by the Boards of Examiners.—Situations as teachers wanted.—**EDITORIAL:** Report on the state of Public Instruction in Lower Canada for the year 1858.—**NOTICE OF BOOKS.**—Monteith's French without a master.—French Genders.—Provancher, Traité de Botanique.—**MONTHLY SUMMARY:** Miscellaneous intelligence.—Scientific intelligence.

## CANADIAN HISTORY.

### The Brock Monument.

Monuments are a nation's landmarks. Nations have disappeared without leaving to posterity a written history to keep alive the memory of their sons and the glory of their actions; their existence would now be unknown, and the traveller would pass unconsciously over the tombs of the Asiatic conquerors or Egyptian Kings did not the lofty column or massive pyramid, palace of the dead, tell of actions there performed or of potentates and conquerors buried beneath. In the deserts of the East where moving sands now cover once fertile regions and where a few crumbling walls mark the sites of once flourishing cities, whose names are not inscribed on papyrus or on leaden tablets, the head of some sphynx or curiously engraved funeral urn, throw light on the events of a kingdom shrouded in the night of antiquity. Were there not such monuments as the obelisk and the needle, we of the time of the steam engine and magic wire could form no idea of the progress of the arts in the dominions of the Pharaohs and the skill of man at that remote epoch; we should perhaps look with disdain upon the peoples of the past, be inclined to think that we had reached a state of civilisation before unknown, unheard, unthought of, did not the surprising works exciting every day the admiration of the explorers of antiquities, moderate our pride in making us despair of ever equalling the mighty works of the unaided hand of man, which have survived the ruin of empires, the convulsions of nature, the effacing fingers of destructive time, and that have transmitted and will transmit to distant ages the memories of statesmen, warriors and kings. A monument is the symbol of the lofty aspirations of the immortal spirit, which tends beyond its habitation of to day, and wishes to outlive the span of its mortal career; it is the testimony of a people's gratitude, and the only meet tribute it can pay to those who have sacrificed their lives on the altar of their country's love; it is the only worthy gift they durst offer to those elevated minds, who overcoming the weakness of nature, have suffered hardships and given their lives to preserve their existence. The patriot or the warrior obtains for his citizens prosperous days, or drives from them the invading foe and preserves them as a people; to that patriot or to that warrior is erected a monument, which shall long keep alive his memory and transmit his fame to coming ages. There is a simple sublimity in a monument: a

few piled stones the emblem of immortality! A country always thinks with fond regret of the children who died in her defence or defended her cause; she wishes that they should ever live in her midst, but unable to give them perpetual life she confers on them undying fame and ever enduring immortality; she engraves their name on a stone, which points to the spot where took place an action, which her children may admire and learn to emulate. It is related of the elder Cato, who gave his leisure moments to the education of his children, that to inspire them with the patriotic fires of the Roman, to impart to them a knowledge of the heroes whose achievements were the admiration of the ancients and excite wonder at the present day, he drew pictures representing the dauntless bravery of Cocles, and superhuman fortitude of Scævola; he led them round the environs of Rome and shewed the places rendered memorable by battle or steady retreat. He, considered by the great intellects of the Augustan era, as the model of a citizen, thought no better instruction could be given youth than in teaching it the history of Rome, and exciting admiration for its defenders. There is no greater incentive to glory, nothing more fecund in great thoughts, than the scene afforded by the actions of great men, and the grateful remembrance of their country. Then, my readers, ye men of pedagogic lore, resolute handlers of the birch, and lights of the young children who come to learn from your mouths the first lessons of knowledge, and sip from the cup you have prepared for them, their first draught from the refreshing well of science inspire them with the love of Canada, our native soil, make them acquainted with all the historic associations time has twined around this land; ye need not lead them to distant climes to shew them sublime spectacles and beautiful landscapes, open but the page of our history and on it you will find grand and delightful scenes and stirring events to excite their active curiosity.

We write for the teacher, and our ambition is that our writings may please, interest and instruct him, and smooth the rough path his avocations lead him into. We shall then relate in few and simple words an episode not without importance in the history of Canada, and which occurred during the war of 1812, so prolific in good results for the Lower Province. It was at the opening of this war that the French Canadians showed their generosity in forgiving the injuries they had suffered under the administration of the tyrannic Craig, by becoming the staunch defenders of Britain, and displaying under the English flag the bravery, which in former times, they had shown when marching to battle with the infantry of France. Many places obtained at that time a local celebrity for deeds worthy of being more generally known. The Americans had imagined that they could take Canada without soldiers, and that they could as easily command it as England did the Ocean. The Voltigeurs and the gallant officers of the french militia, in whose veins coursed the generous blood of the french chivalry roused the Upper Canadians to follow their example and quickly shewed the invaders that they had no puny foes to contend with (1).

(1) Montgomery Martin—The British Colonies.

The French Canadian peasant still recurs with pleasure to the affair of Châteauguay, where he showed himself far superior in military qualities to his boastful neighbour. The war of 1812 taught England to appreciate the loyalty of the Canadians, and to consider Canada as her bulwark in North America.

One of the most memorable events of the campaign of 1812 and which reflects a high degree of honour upon the Canadian militia, meriting for them the esteem of the country, a leaf in its history and a monument to their leader, was the battle fought near the present village of Queenston, which is seven miles below the falls, seven miles above Fort Niagara, and twenty miles north by east of Fort Erie, a battle known in our history as the battle of the heights of Queenston. The engagement took place on the 13 October, 1812. The following narrative of the event is from Christie's History of Canada.

"General Brock, who with unwearied diligence had watched the motions of the American forces upon the Niagara frontier, commanded by major general Van Ransalaer, was convinced from the movements he had observed on that shore, that an invasion was premeditated, and kept his slender force upon the alert. On the 4th of October a spy was sent over to the British side, who returned with information that General Brock had moved on to Detroit, with all the force that could be spared. Encouraged by this news, every preparation was taken for a descent upon Queenston. On the morning of the 11th, their forces were concentrated at Lewiston, opposite that place, with a view of making an attack upon the latter; but through the neglect or cowardice of the officer entrusted with preparing and conducting the boats to the place of embarkation, the attack miscarried. Early in the morning of the 13th, their forces were again concentrated at Lewiston, and the troops embarked under cover of a battery of two eighteen and two six pounders. This movement being soon discovered, a brisk fire was opened upon them from the British shore, by the troops, and from three batteries. The Americans commenced a cannonade to sweep the shore, but with little effect. The first division under colonel Van Ransalaer, effected their landing unobserved under the heights a little above Queenston, and mounting the ascent, attacked and carried an eighteen pounder battery, and dislodged the light company of the 49th regiment. The enemy were in the meantime pushing over in boats, and notwithstanding the current and eddies, here rapid and numerous, and a tremendous discharge of artillery which shattered many of their boats, persevered with dauntless resolution, and effected a landing close upon Queenston, where they were opposed by the grenadiers of the 49th regiment and the York volunteer militia, with a determination verging upon desperation. The carnage became terrible. The British being overwhelmed with numbers, were compelled to retire some distance into a hollow. General Brock, who was at Niagara, a short distance below, having heard the cannonade, arriving at that moment, the grey of the morning, with his provincial aid-de-camp, Lt.-Col. M'Donnell, from that place, and having rallied the grenadiers of his favorite 49th, was leading them on to the charge, when he received a musket ball in his breast, which almost immediately terminated his existence. In the interim, the light company, supported by a party of the Yorkers, rallied, and reascended to dislodge the enemy from the heights. They formed and advanced to the charge, exposed to a smart fire, but finding the enemy posted behind trees, so that a charge could have little effect, they desisted, and separating, posted themselves in like manner, and kept up a sharp fire for some time. Lieut.-Col. M'Donnell, who had joined them while forming for the charge, and was encouraging the men, received a ball in his back, as his horse, which had been wounded, was in the act of wheeling. He survived his wound but twenty-four hours, in the most excruciating pain. The Americans having effected their landing with an overwhelming force, the British were obliged to give way, and suspend the fight until the arrival of reinforcements, leaving the Americans in possession of the heights. General Sheaffe soon after came up with a reinforcement of three hundred men of the 41st regiment, two companies of militia, and two hundred and fifty Indians. Reinforcements having also arrived from Chippewa, the general collected his whole force, amounting to upwards of eight hundred men, and leaving two field pieces, with about thirty men under lieutenant Holcroft of the royal artillery, in front of Queenston, as a check to prevent the enemy from occupying the village, proceeded by a circuitous route to gain the rear of the heights upon which the enemy were posted. The Indians, being more alert than the troops, first surmounted the hill, and commenced the attack, but were repulsed and fell back upon the main body, who formed with celerity, and upon the word, advanced to the charge under a heavy shower of musketry. The British set up a shout, accompanied with the war-whoop of the Indians, and advanced

at the double quick pace, when the Americans struck with terror, gave way and fled in all directions, some concealing themselves in the bushes, others precipitating themselves down the precipice and being either killed by the fall or drowned in the attempt to swim the river. A terrible slaughter ensued by the Indians, whose vengeance it was impossible to restrain, until a white flag was observed ascending the hill with offers of unconditional surrender, which were accepted. An armistice of three days was proposed by the American and granted by the British general, in order to take care of their wounded and bury their dead on condition of destroying their batteaux, which was immediately complied with. One general officer (Wadsworth) two lieutenant-colonels, five majors, a multitude of captains and subalterns, with nine hundred men, one field-piece, and a stand of colours, were the fruits of this important victory, the enemy having lost in killed, wounded, missing, and prisoners, upwards of fifteen hundred men. General Van Ransalaer, before the arrival of the reinforcements from Niagara under General Sheaffe, finding the fate of the day still undetermined, his troops almost exhausted with fatigue, and falling short of ammunition, had returned to the American shore, to urge across reinforcements from the embodied militia; but they, notwithstanding every menace and entreaty on his part, unannouncedly refused. In this dilemma, he wrote a note to General Wadsworth, who remained with the Americans on the Queenston heights, informing him of the situation of things, and leaving the course to be pursued much to his own judgment, assuming him if he thought best to retreat he would send as many boats as he could command, and cover his retreat by every fire he could make. But before the latter had time to resolve upon any mode of security or retreat, the spirited advance of the British had decided the fate of the day.

Thus ended, in their total discomfiture, the second attempt of the Americans to invade Upper Canada. The loss of the British is said to have been about twenty killed, including Indians, and between fifty and sixty wounded. The fall of General Brock, the idol of the army and of the people of Upper Canada, was an irreparable loss, and cast a shade over the glory of this dear-bought victory. He was a native of Guernsey, of an ancient and reputable family, distinguished in the profession of arms. He had served for some years in Canada, and in some of the principal campaigns in Europe. He commanded a detachment of his favourite 49th regiment, on the expedition to Copenhagen with Lord Nelson. He was one of those men who seem born to influence mankind, and mark the age in which they live. As a soldier he was brave to a fault, and not less judicious than decisive in his measures. The energy of his character was expressed in his robust and manly person. As a civil governor, he was firm, prudent and equitable. In fine, whether viewed as a man, a statesman, or a soldier, he equally deserves the esteem and respect of his contemporaries and of posterity. The Indians who flocked to his standard were enthusiastically attached to him. He fell at the early age of forty-two years. The remains of this gallant officer were, during the funeral service, honoured with a discharge of minute guns from the American, as well as British batteries, and with those of his aid-de-camp, Lieutenant-Colonel M'Donnell, interred in the same grave at Fort George on the 16th October, amidst the tears of an affectionate soldiery and a grateful people, who will revere his memory, and hold up to their posterity the imperishable name of Brock."

The Indians who, in 1812, figured for the last time in our history, shewed their gallant spirit when in 1841 they came forward and subscribed the sum of two hundred pounds currency, to rebuild the monument which some sacrilegious hands had destroyed in 1840. The Chippewas, the Hurons, the Mansas, the Oneidas, the Nissis-gas, and the Mohawks, presented addresses to the Government of Upper Canada which breathe that eloquence which can proceed only from the lips of the inhabitant of the forest, and the dweller along the shores of the great lakes. There is a beauty in the Indian diction, a grandeur in its forms of expression, not to be found in the language of any other people; it expresses in simple but apt terms, with natural ornaments, the unaffected feelings of the Indian's heart; for the savage untrammelled with the bonds of society, free from the petty observances of civilized life, has attained, or rather possesses naturally, the most beautiful expressions to render the emotions of the soul. No greater homage has ever been offered to Sir Isaac Brock than the addresses which the few descendants of the once great tribes of the six nations presented when they heard that white men had desecrated the grave of the brave warrior. For the Indians hold sacred the dwellings of the dead, they love to light their fires over the mounds that mark their graves, they smoke the pipe of peace and indulge in visions of the day, when they shall meet their warrior friends in the happy hunting grounds. Brock had acquired a great control over the Indians and was exceedingly beloved by them. They had treasured his mem-

ory in their hearts; oft the village sages, redoubtable warriors of past times, last chroniclers of the battles of the Indian, spoke of the bravest of the braves, and told how he flew to the rescue of the Red men "who were sitting together, like a family of helpless children in danger of being tomahawked." In this great influence which Brock exercised over the Indian he resembled Montcalm, who also had acquired a mastery, over their ungovernable passions which no one before had been able to attain. In 1841 there still remained a few of the warriors who had fought on the heights of Queenston. When the wise men of the Council told those who lived at a great distance North of the many fires and who seldom heard what was passing among their white brethren, that the monument erected to their favorite hero had been defaced: the anger of the Nissisagas was great. They had not forgotten the deeds of the lamented general of whom, they said, his eye was like the eagle's, his motions like arrows from the bow, and whose enemies fell before him, as the trees before the blast of the great spirit. The Indian tribes are fast melting away, leaving behind them few mementoes of their existence in a land of which they were the uncontrolled sovereigns, less the euphonious name of a river, where once floated their gliding canoes, or of an eminence or sheltered dell, or mound, where once they started on their war courses, or lit their night fires, or buried their warriors. The pages of the novelists are filled with many a discourse said to have been delivered at the council lodge; but the imaginative powers of fiction have never equalled the pathetic language in which the wanderers along the French River, or sojourners at Otonabee, expressed their grief at the insult offered to the white brave, the beloved of their great chief Tecumseth. In presenting their humble offerings we are poor, they said, but our hearts are big, we wish to put a few stones over the grave of our departed friend. From the many addresses presented to Sir George Arthur, Lieutenant-Governor of Upper Canada, in 1841, by the Indian tribes of Western Canada, on the subject of the spoliation of the Brock monument, the following has struck us for its sublimity of sentiment. When time which passes with the swiftness of the deer, when startled by the tread of the young hunter, shall have swept the few remains of the tribes to the islands in the happy hunting ground, then will be held in grateful recollection the memories of Chevguna and Koutoung, orators at the council lodge.

#### TO OUR GREAT FATHER IN TORONTO.

Father:—We have heard that the Longknife has destroyed, in the night, the tomb which the brave had built to the bravest.

Father:—That chief led us, as well as you, to victory. On that hill which we conquered, his blood was mingled with ours. Father, we are sorry.

Father:—Among our people, the graves of the dead are sacred, the curse of the Great Spirit falls upon him who tramples on that even of an infant; the passing Indian stays his steps to replace its scattered remains, and calls for vengeance on the destroyer.

Father:—We are poor and weak; what we have comes from you: but we also wish to join our White Brethren in restoring the tomb of our friend and leader.

Father:—When the passer by gazes on the monument of Brock, let him see written: "The red men struck the foe by the side of the dead; he lives in their hearts, and their hand has here placed one stone to his memory."

Father:—We say again we have but little;—of that little accept some, and we shall be proud thus at once to tell our love for the Warrior we mourn, and our hatred of those who insulted his remains.

Father:—We take you by the hand and bid you farewell.

CHEVGUNA,  
KOUTOUNG, &c.

During the last month the heights of Queenston were the scene of an interesting ceremony, the inauguration of the new monument. We subjoin the speech which Sir Allan McNab delivered on the occasion and a description of the monument.

H. G. M.

#### SPEECH OF SIR ALLAN MACNAB.

##### *My Friends,*

We meet upon the anniversary of a day freshly remembered by some now present, and rendered deeply interesting to all the inhabitants of Canada by the event which will, for ever, associate the 13th October with Queenston Heights. On that day, forty seven years ago, was fought, upon these Heights what is known in history, and in your family traditions, as the "Battle of Queenston." It was, though crowned with ultimate success, a day of vicissitudes, and not without alloy. When hostilities suddenly commenced on this side of the Atlantic, in the year 1812, the gallant soldiers of

the mother country were, under the illustrious Wellington, engaged in the sanguinary operations of the war in Europe; and knowing the inability of the King to succour us with reinforcements adequate to our defence, the illustrious Brock, with implicit faith, at once placed his reliance mainly upon the militia of the province, and our ever faithful Indian allies, for the protection of this part of Her Majesty's dominions. Events proved that his confidence was not misplaced. The first serious burst was upon these Heights. In the early part of that momentous day the enemy had gained possession of the elevated ground, and the intrepid Brock, regardless of their numbers and position, made a too daring attempt to dislodge them. While valiantly charging up the abrupt ascent at the head of a far inferior force, he fell, mortally wounded. Brock fell—not as Wolfe fell—in the arms of victory—for victory still hovered in the distance. He fell, rather as Montcalm (a kindred spirit) fell—in the moment of repulse; and, like both Wolfe and Montcalm, he met a soldier's death upon the battle-field. He fell in the arms of his country and they shall forever embrace him. You all know the sequel. The loss of our beloved General, at that early stage of the war, cannot be estimated, nor its effects described. He had established himself in the confidence of all classes in the highest degree, and had become a tower of strength in his single person. The deep hold which he had acquired in the affections of the people, is manifested by the lively interest which, from the day of his death to the present hour, has been universally taken in his cherished memory and undying fame. This universal feeling of respect prompted the Legislature, soon after the peace, to erect a monument on these heights, sacred to the memory of the illustrious dead. It was done—and his remains, with those of his steadfast friend, Macdonnell, reposed beneath the lofty and imposing pile—fit emblem of a people's admiration, reverence, and gratitude. Of its wanton and malicious spoliation you are well aware. Let the corrupt heart that conceived the design, and the coward hand that polluted a hero's unguarded shrine, under the cloak of midnight darkness, remain in darkness to the end of time. We would not give a further thought to the reprobate perpetrator, but leave him to the contempt and scorn of all mankind. The flame of indignation which the dastardly act lit up throughout Canada, blazed conspicuously upon these heights in the year 1840. We here saw a mighty host assembled from all parts of the province, not only to express their resentment of the foul offence, but to show forth to the world, their lasting veneration for the departed warriors whose tomb had been thus desecrated. It was there amidst the vehement acclamations of thousands, resolved to reconstruct by private subscription, another trophy, more towering than the first, in proof that the feelings which animated the Legislature in 1815 and the men of that day, had not waned, but still glowed in every breast, and to testify that the lamented soldiers—though dead—did indeed live in the hearts of their countrymen. The fruits of that day's Resolution, now covering the bodies of Brock and Macdonnell, appear in the beautiful and commanding column which stands before you:—"Esto perpetua." It may be proper for me to give here a brief outline of the proceedings which have led to this result. It being rightly apprehended that the former monument had been so much shaken that it must soon fall in fragments, the necessity for taking steps to replace it became urgent. The initiative was taken, on the 4th June, 1840, by the men of Gore, whom I had the honour to command. Subscriptions were, from time to time, received from thousands who were thus appealed to, and additional sums were received from other sources—among others, the officers and men of several regiments of the Loyal New Brunswick Militia presented their donations, and expressed in warm terms their respect for the memory of General Brock, and their sympathy with the object in contemplation. Very handsome contributions were also made by the brave Indian chiefs and warriors, many of whom rendered such good service on the memorable 13th of October, and on many other occasions, some the most trying that occurred, during the war. The remittances of these brave and faithful warriors were accompanied by addresses to the Queen's Representative, expressive of their indignation and disgust at the atrocious act of desecration which had rendered their assistance necessary. Those addresses emanated from the chiefs of different tribes, scattered throughout Upper Canada, and all breathe a similar feeling, expressed in the native eloquence and beauty of language for which the warrior chiefs of the "red men of the forest" are so justly celebrated. In acknowledging their liberal gifts, they were assured that their names should be honourably associated with those of their white brethren, in this laudable undertaking, as their money would be mingled with the common fund raised for the accomplishment of a common object. And it has been done. Designs were called for, and the one submitted

by the talented architect, Mr. Thomas, was selected. Under his superintendence, the whole has been satisfactorily completed by Mr. Worthington, the builder, in the style you see. You will agree with me, I hope, that it reflects great credit on the taste and judgment of the architect, and the skill of the builder; and associated as they have become with the work, it cannot fail to constitute a conspicuous and lasting proof of their professional abilities. This monument represents a free-will offering, flowing from emotions which reminiscences of the last war awaken. It commemorates the feelings of the country, inspired by the death of Brock and the brave men who fell with him on these heights, enhanced by the subsequent achievements which, invigorated and encouraged by their example, the loyal inhabitants of Canada proudly exult in. It points back to the scenes which were enacted in former years. It points forward to the deeds which those scenes inculcate. In those years, the blood of our Militia and of our valiant Indian allies was freely shed, and mingled with the blood of the regular soldiers, with whom they fought and died side by side in defence of Canada. Yes, with a spirit and endurance beyond all praise, the three, supporting each other, maintained the whole line of an extended frontier, and repelled attack at every point. Though sometimes overpowered by superior numbers, and not always able at once to dislodge the enemy, yet they steadily resisted his incursions, and circumscribed his foothold within the narrowest limits. I may mention, as instances, the lines of circumvallation—the cross-roads forming the centre, which hemmed in the enemy in the town of Niagara, in 1813, and the siege and investments of Fort Erie, in 1814. The details of these conflicts would, though full of interest, exceed the limits on this occasion—it is the task of the historian to narrate them. It may, however, interest you to be told that, on this frontier the last shot was fired on Lyons' Creek at Cook's Mills, in the month of October (not on the 13th, but on the 19th), in the year 1814. The echo of that shot may still vibrate in the ears of some present. It was providentially ordained that it should prove a farewell shot—the precursor of a lasting peace with our high spirited and gallant neighbours, of whom it may be truly said that, with a characteristic impulse, they warmly espoused the cause of their country, and bravely sustained in many hot encounters. It is our mutual interest, and, doubtless, our mutual inclination and desire, to live in the friendly intercourse and good-fellowship which have since prevailed. Let no turbulence disturb the harmony! May no international strife ever again place us in a hostile attitude! The sympathy manifested by that people at the funeral of General Brock, when his remains were first interred at Fort George, and in the steps afterwards taken to do honour to his memory, evinced how justly they appreciate heroic character, and accords well with the spirit of a nation emulous of heroic deeds. My friends, when we extol the gallantry of our militia, we do them but half justice, and do commend but a part only of the merit which distinguish them. We should not overlook the exposure and the privations which (thinly clad and ill provided as many poor men were) all endured throughout three long years of trial. There were the outlying picket; the frontier guard; the sentinel's vigilance; the midnight patrol; the morning watch; there were the storms of the seasons; there were the sickness and death. Add to this, wives and children—mothers and sisters—the aged and infirm—houses and barns—the cattle and the grain all but deserted, at the imperative call to arms, of their invaded country. It required the highest moral courage to relinquish, as our militia did, their peaceful homes, when summoned away by the loud blasts of war. My friends, I indulge in no fiction or flights of imagination in these allusions to harrowing recollections. They are realities vivid in living memory. There are amongst us, those whose hearts still bleed at the remembrance of those days so full of anguish—glorious though they were. Every drop of blood shed—every life lost—in that eventful struggle, did but cement more strongly attachments to the soil and fidelity to the Crown, and did but develop more and more that loyal and martial spirit with which I am ever proud to proclaim the militia of Upper Canada have been always animated. The militia of that day acted as became them—and taught by the graphic teaching of example how it would become their posterity to act, should (which God avert) a call of like urgency ever again invoke a like energy and devotion in the military service of their country. When we reflect, then, that the militia were led to their earliest triumphs, and inspired with confidence and self-reliance by the encouraging example of Brock, that his example and influence were (as it were) the foundation of all that followed his untimely death—we can understand how it is that all adore his memory. Friends! this fit emblem of a nation's gratitude is now inaugurated. We here dedicate it to the memory of Sir Isaac Brock, and those who fell by his side upon this battle-field—and, through them, to the imperish-

able memory of all who fell in defence of Canada. It is the becoming offering of an admiring and grateful feeling to Sir Isaac Brock. It grandly illustrates the affection, steadfastly cherished, for the heroic champion who, in the dark hour of our adversity, laid down his life in our cause. It is a splendid and imposing proof that half a century has not diminished the public esteem for that noble man, nor dimmed the recollection of his noble actions. It is a consummation in which all proudly exult and warmly participate. It is a commemoration of this anniversary worthy of both the living and the dead. It perpetuates events that shall never be obliterated. It shows forth the spirit of this day, and should future exigencies require it, a like spirit would be aroused half a century to come—yea to the latest posterity—by a people ever prepared to evince that there exists, to the memory of Brock, a monument more durable than stone, in the patriot hearts of successive generations. Well done noble militia! Well done people of Canada! Let this spot be hallowed! Honour to the remains of the heroic dead! May they repose in peace until the Judgment morning, when the sound of the last trump shall rend this pillar—burst the tomb—and awaken the sleepers to the resurrection of eternal life. One word more. Would that what I have said were better said, and more worthy of the occasion. Before we part permit me in the name of Canada, to thank you for your voluntary presence here to-day, to pay these last obsequies at the shrine of Brock. I feel that I may also thank you, in the name of His Excellency the Governor General, who would, I am sure, have joined us, had not a sad bereavement, which we all deplore, prevented his attendance. We have also to regret the absence of our much respected and old friends, Sir John Beverley Robinson and Mr. Justice McLean, both of whom fought at the Battle of Queenston, and the latter of whom was severely wounded; but I regret to say that their official duties, in holding the Circuit Courts, deprive us of the honour of their presence, and them of the gratification it would have afforded them to have attended on this interesting occasion. I feel that I may thank you and all the contributors to this pious work, in Her Majesty's name, for this gratifying manifestation of loyalty. In my own name, and in the name of the Committee, of which I have had the honour to be chairman, I most heartily thank you, and all other contributors towards a consummation which has been near my heart for many years—an event in which I glory, and which renders this, to me, one of the proudest and happiest days of my life. And now, remarking that this monumental pile was commenced, and has been finished, in the reign of our Most Gracious and justly beloved Sovereign Queen Victoria, I shall close, by proposing to you, what is ever enthusiastically received, and heartily responded to by the Loyal Militia of Canada—Three cheers for the Queen—God bless her!

#### MONUMENT.

The operations for its construction were commenced in 1856, and on the 13th of October in that year the ceremonies of laying the foundation stone, and also the third re-interment of Brock took place. His remains and those of his aide-de-camp were temporarily removed from the ruined column to an adjoining burying ground, and were now to be conveyed to their resting place in the new structure. The day was splendidly fine, and a vast concourse attended to do homage to the illustrious dead. The pall-bearers were Cols. E. W. Thomson, W. Thomson, Duggan, Stanton, Kerby, Crooks, Zimmerman, Caron, Shorne, Servos, Clark, Wakefield, and Miller. And among the chiefs mourners were Colonel Donald McDonnell, Deputy Adjutant General for Canada West, Colonel Taché, Lieut. Col. Irvine, and the survivors of 1812 and the brave Indian Chiefs.

The foundation stone was then laid by Lieut. Col. McDonnell, brother of the gallant man who shared the fate and the honours of his commander-in-chief, and addresses were delivered by the Hon. W. H. Merritt, M. P., David Thorburn, Esq., Col. Taché, Col. E. W. Thomson, &c.

The column was completed in 1856. The surrounding grounds containing about forty acres, have now been fenced in, a stone lodge erected, with handsome wrought iron ornamental gates and cut stone piers, surmounted with the arms of the hero at the eastern entrance. From the entrance a carriage road, of easy ascent, winds up the steep, and is continued to the heights by an avenue 100 feet wide, planted with chestnuts, maples, &c., terminating at the monument in a circle 180 feet diameter.

Upon a solid rock is built a foundation 40 feet square and 10 feet thick of massive stone; upon this the structure stands in a grooved plinth or sub-basement 39 feet square and 27 feet in height, and has an eastern entrance by a massive oak door and bronze

pedestals, forming two galleries to the interior 114 feet in extent, round the inner pedestal, on the north and south sides of which, in vaults under the ground floor, are deposited the remains of General Brock, and those of his aid-de-camp, Colonel McDonnell, in massive stone sarcophagi. On the exterior angles of the sub-basement are placed lions rampant seven feet in height, supporting shields with the armorial bearings of the hero. On the north side is the following inscription:

## UPPER CANADA

Has dedicated this monument to the memory of the late  
**MAJOR-GENERAL SIR ISAAC BROCK, K. B.,**  
 Provincial Lieut. Governor  
 and Commander of the Forces in this Province,  
 whose remains are deposited in the vault beneath, opposing the invading  
 enemy, he fell in action near these heights,  
 On the 13th of October, 1812,  
 In the 43rd year of his age.  
 Revered and lamented by the people whom he  
 governed, and deplored by the Sovereign to whose service his  
 life had been devoted.

On brass plates, within the column, are the following inscriptions:—

In a vault beneath are deposited the mortal  
 remains of the lamented  
**MAJOR-GENERAL SIR ISAAC BROCK, K. B.,**  
 Who fell in an action near these heights on 13th  
 October, 1812,

And was entombed on the 16th October, at the bastion of Fort George, Niagara, removed from thence and re-interred under a monument to the eastward of this site on the 13th October, 1824, and in consequence of that monument having received irreparable injury by a lawless act on 17th of April, 1840, it was found requisite to take down the former structure and erect this monument—the foundation stone being laid, and the remains again re-interred with due solemnity on 13th October, 1853.

In a vault beneath are deposited the mortal  
 remains of  
**LIEUT. COL. JOHN McDONNELL, P. A. D. G.,**  
 and Aide-de-Camp to the lamented  
**MAJOR-GENERAL SIR ISAAC BROCK, K. B.,**  
 Who fell mortally wounded in the battle of Queenston,  
 on the 13th October, 1812,  
 and died on the following day.  
 His remains were removed and re-interred with  
 due solemnity,  
 on the 13th October, 1853.

The column is placed on a platform slightly elevated, within a dwarf wall enclosure 75. 0 square, with a fosse around the interior. At each angle are placed massive military trophies, on pedestals, in carved stone, 20. 0 in height.

Standing upon the sub-basement is the pedestal of the order, 16. 0 square, and 88. 0 in height, the die having on three of its enriched pannelled sides, emblematic *basso relievos*, and on the north side, fronting Queenston, the battle scene in *alto relievo*.

The plinth of the order is enriched with lions' heads and wreaths in bold relief. The column is of the Roman composite order, 95. 0 in height, a fluted shaft, 10. 0 diameter at the base; the loftiest column known of this style; the lower tones enriched with laurel leaves, and the flutes terminating on the base with palms.

The capital of the column is 16. 0 square, and 12. 6 high. On each face is sculptured a figure of victory, 10. 6 high, with extended arms, grasping military shields as volutes; the acanthus leaves being wreathed with palms, the whole after the manner of the antique. From the ground to the gallery at the top of the column, is continued a staircase of cut stone, worked with a solid nurel of 235 steps, and sufficiently lighted by loop-holes in the fluting of the column, and other circular wreathed openings.

Upon the abacus stands the cippas, supporting the statue of the hero, sculptured in military costume, 17. 0 high, the left hand resting on the sword, the right arm extended, with baton. The height from the ground to the top of the statue is 190, exceeding that of any monumental column, ancient or modern, known, with the exception of that on Fish street Hill, London, England, by Sir Christopher Wren, architect, in commemoration of the great fire of 1666, 202 feet high, which exceeds it in height by 12 feet.—*Globe*.

## E D U C A T I O N .

## School days of Eminent Men in Great-Britain.

By Joux Times, F. S. A.

(Continued from our last.)

## LXXII.

A POOR WESTMINSTER SCHOLAR.

Dr. Stubbo, the eminent physician, one of the most learned men of his time, was born in 1631, near Spilsby, in Lincolnshire; whence his father, an Anabaptist minister, removed to Ireland; but when the Rebellion broke out in that country in 1641, his mother fled with him to London, walking thither on foot from Liverpool. She maintained herself in the metropolis by her needle, and sent her son, then about ten years old, to Westminster School. Here he frequently obtained pecuniary relief from his schoolfellows, as a remuneration for writing their exercises. Busby was struck by Stubbo's rare talents and assiduity, and introduced him to Sir Henry Vane, who happened one day to come into the school; when Sir Henry relieved the immediate wants of the lad, and remained for ever afterwards his steady friend; assisting him at his election to Oxford, where he became of considerable consequence: his reputation for learning increased daily, and he used to converse fluently in Greek in the public schools.

## LXXIII.

MERCHANT TAYLORS' SCHOOL FOUNDED.

The royal example of Edward VI. was nobly followed by one of the great City companies founding, in the succeeding reign, a grammar-school in the metropolis, principally through the personal benevolence of its members. In the year 1561, the Merchant Taylors' Company, chiefly by the gift of 500*l.*, and other subscriptions of members of the Court of Assistants, raised a fund for this great educational object. Among the contributors was Sir Thomas White, some time master of the Company, and who had recently founded St. John's College, Oxford. With the above fund, the generous band of citizens purchased a certain property lying between Cannon-Street and the Thames, part of "the Manor of the Rose," a palace originally built by Sir John Poultney, Knt., five times Lord Mayor of London, in the reign of Edward III. In these premises, consisting principally of a gate-house and court-yard, the Company established their school. The Great Fire, however, destroyed the ancient buildings; and in 1675, the present school and the head-master's residence were erected; it includes a library, (on the site of an ancient chapel,) which contains a fair collection of theological and classical works. The school now consists of about 260 boys, who are charged 10*l.* per annum each: they are admitted at any age, on the nomination of the members of the Court of the Company in rotation; and the scholars may remain until the Monday after St. John the Baptist's Day preceding their nineteenth birthday. Hebrew, Greek, and Latin have been taught since the foundation of the school; mathematics, writing, and arithmetic were added in 1829, and French and modern history in 1846. There is no property belonging to the school except the buildings: it is supported by the Merchant Taylors' Company out of their several "funds," without any specific fund being set apart for that object; it has, therefore, been exempt from the inquiry of the Charity Commissioners; but, like Winchester, Eton, and Westminster, it has a college almost appropriated to its scholars. Thirty-seven out of the fifty fellowships of St. John's College, Oxford, and other exhibitions at Oxford and Cambridge, are attached to it; the election to which takes place annually on St. Barnabas' Day, (June 11,) when the school prizes are distributed; there is another speech day (Doctors' Day,) in December. Plays were formerly acted by the boys of this school, as at Westminster: the earliest instance known was in 1665, when the scholars performed, in the old Hall of the Merchant Taylors' Company, Beaumont and Fletcher's comedy of "Love's Pilgrimage," but under order that this "should be no precedent for the future." Garrick, who was a personal friend of the head-master in his time, took great interest in these performances. They have been continued to our day, in a noble crypt, which is all that remains of the manorial mansion of the Rose. The School Feasts and Anniversary Feasts of the old scholars have, however, long been held in the Company's Hall.

Amongst the eminent scholars educated at Merchant Taylors'

wore, Bishops Andrewes, Dovo, and Tomson, three of the translators of the Bible; Archbishop Juxon, who attended Charles I. to the scaffold; Bishop Hopkins (of Londonderry); Archbishops Sir William Dawes, Gilbert, and Boulton; Bishop Van Mildert, and eleven other prelates; Titus Oates, who contrived the "Popish Plot"; Sir James Whitlocke, Justice of the King's Bench; Bulstrode Whitlocke, who wrote his "Memorials"; Shirley, the dramatic poet, contemporary with Massinger; Charles Wheatly, the ritualist; Neale, the historian of the Puritans; Edmund Calamy, and his grandson Edmund, the Non-conformists—the former died in 1666, from seeing London in ashes after the Great Fire; the great Lord Clive; Dr. Vicesimus Knox, subsequently celebrated as the headmaster of Tunbridge School; Dr. William Lowth, the learned classic and theologian; Nicholas Amhurst, associated with Bolingbroke and Pulteney in the *Craftsman*; Charles Mathews the elder, comedian; Lieut.-Col. Denham, the explorer of Central Africa; and J. L. Adolphus, the barrister, who wrote a *History of the Reign of George III.* Also, Sir John Dodson, Queen's Advocate; Sir Henry Ellis, and Samuel Birch, of the British Museum; John Gough Nichols, F. S. A., &c.

## LXXIV.

## GRESHAM COLLEGE FOUNDED.

In the middle of the reign of Elizabeth, one of her merchant-princes—*Flos Mercatorum*, as he was deservedly styled—evinced his love of the higher branches of knowledge by the foundation and endowment of a College which considerably assisted the promotion of science in England in the early part of the seventeenth century. The founder was Sir Thomas Gresham, the originator of the Royal Exchange, the rents arising from which, together with his mansion, on the death of Lady Gresham, in 1597, to be vested in the Corporation of London and the Mercers' Company. They were conjointly to nominate seven professors, to lecture successively, one on each day of the week, their salaries being 50*l.* per annum: a more liberal remuneration than Henry VIII. had appointed for the Regius Professors of Divinity at Oxford and Cambridge, and equivalent to 400*l.* or 500*l.* at the present day. The Lectures commenced June, 1597, in Gresham's mansion, which, with almshouses and gardens, extended from Bishopsgate-street westward into Broad-street. Here the Royal Society originated in 1645, and met (with interruptions) until 1710. The buildings were then neglected, and in 1768 were taken down, the Excise Office being built upon their site; and the reading of the Lectures was transferred to a room on the south-east side of the Royal Exchange; the lecturers' salaries being raised to 100*l.* each, as an equivalent for the lodging they had in the old College, of which there is a view, by Vertue, in Ward's *Lives of the Gresham Professors*, 1740. On the rebuilding of the Royal Exchange, the Gresham Committee provided for the College, in Basinghall-street, at the corner of Cateaton-street, a handsome stone edifice, in the enriched Roman style, with a Corinthian entrance-porch. It contains a large library, and professors' rooms; and a lecture-room, or theatre, capable of holding 500 persons. The Lectures, on Astronomy, Physic, Law, Divinity, Rhetoric, Geometry, and Music, are here read to the public gratis, during "Term Time," daily, except Sundays, in Latin and English.

## LXXV.

## RUGBY SCHOOL FOUNDED.

Our narrative has now reached that "critical epoch in the advance of civilization, when the discovery of a new world had opened space to the expanding intellect of the old one, which had just then been awakened from the long slumber of the dark ages by the restoration of classical literature; and a new life was thus infused into the sacred cause of education.

One of the first to seize this prevalent spirit was Lawrence Sheriff, a native of Rugby, who had accumulated a large fortune in dealing with the fruits and spices of the West Indies. He was warden of the Grocers' Company in 1666; and in Fox's Book of Martyrs he is spoken of as "servant to the Lady Elizabeth, and sworn unto her Grace," which seems to imply that he was "grocer to the Queen:" he kept shop "near to Newgate Market." Sheriff died in 1667, and by his last will, made seven weeks previously, bequeathed a third of his Middlesex estate to the foundation of "a fair and convenient schoolhouse, and to the maintaining of an honest, discreet, and learned man to teach grammar;" the rents of that third, which then amounted to 8*l.* annually, had swelled in 1825 to above 5500*l.* The estate in Lamb's Conduit Fields (originally Close,) adjoins the Foundling Hospital, and comprises Lamb's

Conduit, Milman, New and Great Ormond, and other adjacent streets.

Immediately upon the founder's death, the school was commenced in a building in the rear of the house assigned for the master; it consisted of one large room, having no playground attached. The first page of the school register, commencing in 1675, shows that of the 26 entrances in that year, 12 were boys not upon the foundation, and one of them came even from Cumberland. The school now took a higher stamp; and early in the list we find the Earls of Stamford and Peterborough, the Lords Craven, Griffin, Stawell, and Ward, the younger sons of the Houses of Cecil and Groville, and many of the baronets of the adjacent counties.

The school buildings were from time to time enlarged; until the improved value of the endowment enabled the trustees to commence, in 1809, the present structure, designed by Hakewill, in the Elizabethan style, and built nearly upon the same spot as the first humble dwelling. The buildings consist of cloisters on three sides of a court; the Great School, and the French and Writing Schools; the dining halls, and the chapel; and the master's house, where and in the town the boys are lodged. The group of buildings cost 35,000*l.*, but are of "poor sham Gothic." A library has since been added. The only former playground was the churchyard; but Rugby has now its bowling-green close, with its tall spiral elms; and its playground, where cricket and foot-ball are followed out-of-doors with no less zest and delight than literature is pursued within.

The instruction at Rugby retains the leading characteristics of the old school, being based on a thoroughly grounded study of Greek and Latin. But the treatment has been much improved: formerly the boys were ill-used, half imprisoned, and put on the smallest rations, a plentiful allowance of rod excepted; and a grim tower is pointed out in which a late pedagogue, Dr. Wooll, was accustomed to inflict the birch unsparingly. Nevertheless, in Wooll's time were added six exhibitions to the eight already instituted; books were first given as prizes for composition; and the successful candidates recited their poems before the trustees, thus establishing the Speeches.

To Dr. Wooll (1) succeeded Dr. Thomas Arnold, the second and moral founder of Rugby. Of the great change which he introduced in the face of education here, we can speak but in brief. Soon after he had entered upon his office, he made this memorable declaration upon the expulsion of some incorrigible pupils: "It is not necessary that this should be a school of three hundred, or one hundred, or of fifty boys; but it is necessary that it should be a school of Christian gentlemen."

The three ends at which Arnold aimed were—first, to inculcate religious and moral principle, then gentlemanly conduct, and lastly, intellectual ability. One of his principal holds was in his boy sermons, that is, in sermons to which the young congregation could and did listen, and of which he was the absolute inventor. The feelings of love, reverence, and confidence which he inspired, led his pupils to place implicit trust on his decision, and to esteem his approbation as their highest reward. His government of the school was no reign of terror: he resorted to reasoning and talking as his first step, which failing, he applied the rod as his *ultima ratio*, and this for misdemeanours inevitable to youth—lying, for instance,—and best cured by birch. He was not opposed to flogging, which boys accept as part and parcel of the institution of schools, and as the servitude of their feudal system; all he aimed to do was to regulate, and, as it were, to legalize the exercise of it. The keystone of his government was in the Sixth Form, which he held to be an intermediate power between the master and masses of the school; the value of which internal police he had learned from the Prefects at Winchester. But he carefully watched over this delegated authority, and put down any abuse of its power. The Præpositors themselves were no less benefited. "By appealing to their honour, by fostering their self-respect, and calling out their powers of governing their inferiors, he ripened their manhood, and they early learnt habits of command; and this system, found to work so well, is continued, and with many of its excellent principles, is now acted on in most of the chief public schools of England." Dr. Arnold died in 1841, on the day preceding his forty-seventh birthday, having presided over the school for fourteen years: in the chapel at Rugby he rests from his labours, surrounded by those of his pupils who have been prematurely cut off. "Yet,"

(1) Dr. Wooll was small in stature, but powerful in stripes; and under his head-mastership Lord Lytleton suggested for the grim closet in which the rods are kept, the witty motto:—"Great Cry and Little Wooll."—See the *Book of Rugby School, its History and Daily Life*, 1856.

touchingly says the Rugbeian writer in the *Quarterly Review*, "if they have known few of the pleasures of this world, they at least have not, like him, felt many of its sorrows, and death has not separated those who in life were united."

Dr. Arnold procured from the Crown a high mark of royal favour—her Majesty having founded an annual prize of a Gold Medal, to which several other prizes have been added. Dr. Arnold succeeded in the head-mastership by the Rev. Dr. Tat, who retired on his appointment to the Deanery of Carlisle, in 1849; and who, in 1856, was preferred to the bishopric of London.

## LXXVI.

## HARROW SCHOOL FOUNDED.

At the village of Harrow-on-the-Hill, ten miles north-west of London,—where Lanfranc built a church, Thomas à Becket resided, and Wo sey was rector—in the reign of Elizabeth there lived a substantial yeoman named John Lyon. For many years previous to his death he had appropriated 20 marks annually to the instruction of poor children; and in 1571, he procured letters patent and a royal charter from the Queen, recognizing the foundation of a Free Grammar School, for the government of which, in 1592, he drew up the orders, statutes, and rules. The head-master is directed to be "on no account, below the degree of Master of Arts;" or the Usher "under that of a Bachelor of Arts." They are always to be "single men, unmarried." The stipends of the masters are settled; the forms specified; the books and exercises for each form marked out; the mode of correction described; the hours of attending school, the vacations and play-days appointed; and the scholars' amusements directed to be confined to "driving a top, tossing a hand-ball, running and shooting;" and for the last mentioned diversion all parents were required to furnish their children with "bow-strings, shafts, and braces to exercise shooting." In addition to scholars to be educated freely, the school-master is to receive the children of parishioners, as well as "foreigners;" from the latter, "he may take such stipends and wages as he can get, except that they be of the kindred of John Lyon the founder." The sum of 20*l.* was allotted for four exhibitions—two in Gonville and Caius College, Cambridge; the others in any college at Oxford—which scholarships have been increased. The revenues of the School estates which Lyon left, are now very considerable; so that one portion of the property, which 70 years ago produced only 100*l.* a-year, now returns 4000*l.*

The school was built about three years after Lyon's decease: the school-room, fifty feet in length, has large, square, heavy-framed windows, and is partly wainscoted with oak, which is covered with the carved names of many generations of Harrovians. The plastered walls above the wainscot were formerly filled with names and dates, but they have been obliterated with whitewash. Boards have since been put up on which the names are neatly carved, in regular order and of uniform size.

Above the school-room is the Monitors' Library. Here is a portrait of Dr. Parr; a portrait and bust of Lord Byron, and a sword worn by him when in Greece; and a superb fancy archery dress, worn on the day of shooting for the silver arrow, about the year 1766. Here, also, is a quarto volume of "Speech Bills." Near the School is the Speech Room, built by old Harrovians: the windows are filled with painted glass, and here is a painting of Cicero pleading against Catiline, painted by Gaving Hamilton. There is a Chapel for the accommodation of the scholars only; to which was added, in 1856, a "Memorial Chapel," in honour of those officers who fell in the Crimean war, who had been educated at Harrow School (2). The head-master's house is in the street of Harrow, and with the school buildings and chapel, is in the Elizabethan style. The device of the school is a lion, rampant, the armorial bearings of the founder, and a rebus of his name (motto, *Sicut Fortuna Domus*), to which have been added two crossed arrows, denoting the ancient practice of archery enjoined by Lyon; and on the Anniversary, six or twelve boys shot for a silver arrow, the competitors wearing fancy dresses of spangled satin. The last arrow was contended for in 1771: the butts were set up on a picturesque spot, "worthy of a Roman amphitheatre," at the entrance to the village.

Beyond the court-yard are courts for racket, a favourite game at

(2) In the Chapel, the Church, and the School, there is no distinction of seats for the sons of nobleman. It was for this reason that Rufus King, the American Ambassador, sent his sons to Harrow, as the only school where no distinction was shown to rank.—*Smith's Handbook*.

Harrow. There is likewise a cricket-ground, and a bathing-place, formerly known as "the Duck Puddle."

The scholars, chiefly the sons of nobleman and gentlemen, number about 400.

Among the eminent Harrovians are William Baxter, the antiquary and philologist; John Dennis, the poet and critic; Bruce, the traveller in Abyssinia; Sir William Jones, the Oriental scholar; The Rev. Dr. Parr; the heroic Lord Rodney; Richard Brinsley Sheridan, Viscount Palmerston; the Marquis Wellesley; Mr. Malthus, the political economist; Spencer Perceval; Earl Spencer, who collected the magnificent library at Althorp; the Earl of Aberdeen; W. B. Proctor, (Barry Cornwall,) the poet; Lord Elgin, who collected the "Marbles" from the Parthenon; Lord Chancellor Gottenham; the Earl of Shaftesbury; and Lord Byron and Sir Robert Peel, both born in the same year, 1788.

(To be continued.)

### Suggestive Hints towards Improved Secular Instruction.

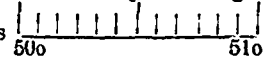
BY THE REV. RICHARD DAWES, A. M.

## VI.

## ARITHMETIC.

(Continued from our last.)

When sufficiently advanced to commence the arithmetic of Fractions, the teacher will find it of great service in giving them correct ideas of the nature of a fraction, to call their attention as much as possible to visible things, so that the eye may help the mind—to the division on the face of a clock—or of the degree or degrees of latitude on the side of a map, thus



showing that a degree, which here represents the unit, is divided into twelve equal parts—and then reckoning and writing down  $1\frac{1}{12}$ ,  $2\frac{1}{12}$ ,  $3\frac{1}{12}$ ,  $4\frac{1}{12}$ ,  $5\frac{1}{12}$ ,  $6\frac{1}{12}$ , (or  $\frac{1}{2}$ ),  $7\frac{1}{12}$ ,  $8\frac{1}{12}$ ,  $9\frac{1}{12}$ ,  $10\frac{1}{12}$ ,  $11\frac{1}{12}$ ,  $12\frac{1}{12}$ , or units, showing how these may be reduced to lower terms, and that the results still retain the same absolute value—that the value of a fraction depends upon the relative, and not upon the absolute value of the numerator and denominator; as  $2\frac{1}{12}$  and  $1\frac{1}{6}$ ,  $3\frac{1}{12}$  and  $\frac{1}{4}$ ,  $4\frac{1}{12}$  and  $\frac{1}{3}$ ,  $6\frac{1}{12}$  and  $\frac{1}{2}$ , etc., have in each case the same absolute value.

In casting his eye round a well furnished school-room, the teacher will see numberless ways in which he may make the nature of a fraction clear to them, as counting the number of courses of bricks in the wall—say it is fifty, as they are of uniform thickness, each will be  $1\frac{1}{50}$  of the whole height—placing the two-foot rule against the wall and seeing how many courses go to making one foot, two feet, etc., there will be such and such fractions—or supposing the floor laid with boards of uniform length and width, each will be such and such a fraction of the whole surface, taking care to point out that when the fractional parts are not equal among themselves they cannot put them together until they are reduced to a common denominator, and the reason of all this. In this way, and by continually calling their attention to fragments of things about them and putting these together, children get a correct idea of numerical fractions at a much earlier age than is generally imagined.

The following kind of question interests them more than very abstract fractions; the teacher should try to form questions connected with their reading.

What are the proportions of land and water on the globe?  $1\frac{1}{3}$   $2\frac{1}{3}$  water. What do you mean by  $2\frac{1}{3}$ ? A whole divided into three equal parts, and two of them taken. Here the teacher would put a piece of paper into a boy's hand, and tell him to tear it into three equal parts, and show the fractions; or by dividing a figure on the black board.

What proportion of the land on the globe does America contain?  $1\frac{1}{3}$ . What Asia?  $1\frac{1}{3}$ . Africa?  $1\frac{1}{5}$ . Europe?  $1\frac{1}{15}$ . And Oceania?  $1\frac{1}{15}$ . Now, putting all these fractions together, what ought they to give? The whole land. The unit of which they are the fractional parts was what? The land on the globe. Work this out. Africa  $1\frac{1}{5}$  or  $3\frac{1}{15}$ ; Europe and Oceania, each being  $1\frac{1}{15}$ , these with Africa will be  $5\frac{1}{15}$ , or  $1\frac{1}{3}$ . America and Asia together are  $2\frac{1}{3}$ , and adding  $1\frac{1}{3}$  to this gives  $3\frac{1}{3}$ , or 1 for the whole.

Having been taught this and decimal arithmetic, they should be taught to work out most of their sums decimally, and made to reason about them as much as possible, rather than to follow a common rule—for instance:



What is the interest of £500 at 5 per cent. for two years?—5 per cent. means what?—the interest on a hundred pounds for a year: then the interest of £1 will only be the one hundredth part of that: work it out, '05—the interest of £2 will be twice as great; of £3 three times as great; and of £6 six times as great, etc. Having the interest for one year, the interest for any number of years will be the interest for one, multiplied by that number, etc.

Children sometimes get into the way of working out questions of this kind, without having any definite idea of what is meant by so much per cent., etc.; thus they should be made thoroughly to understand, as bearing upon many other questions besides those on interest, as will be seen from the examples given; also what is meant by so much in the shilling, so much in the pound, etc.—that if a person spends twopence in the shilling in a particular way, and lays out two, three, ten shillings, he spends 4d., 6d., 20d., etc., in that particular thing.

A penny in the shilling is twenty-pence in the pound, twenty pence in one pound is a hundred times that in a hundred pounds, and would be called so much per cent. The same in the common rule of three; they get into the way of stating their questions mechanically; but what the teacher should do, is, instead of saying as 1 yard: 2s., 6d., : 50 yards to the answer; he should say, if one yard cost 2s., 6d., two yards will cost twice as much; three yards three times; 50 yards 50 times as much, having recourse to the common-sense principle as much as possible.

The following questions, with those at the end of this section, may be useful to the teacher, as bearing upon the economic purposes of life, and will suggest others of a like kind:—

The population of the parish in 1831 was 1,040 at the census of 1841 it had increased 7 per cent., what is it at present?

In the population of the parish, 20 per cent. of them ought to be at school; in this parish, containing 1,040, only 12 per cent. are at school; how many are at school? and how many absent who ought to be there?

The population of the county in 1841 was 355,004;—82.8 per cent. were born in the county, 14.2 in order parts of England, 0.5 in Scotland, and 0.9 in Ireland; what number were born in each country?—how many in number, and what per cent. are unaccounted for?

Give the average of the parish, how many to the square acre; number of the houses, how many to a house, etc. These questions ought also to be the vehicle of a good deal of instruction on the part of the teacher.

A sheet containing the names of the towns in each county, arranged by counties, and giving in a tabular form the population in adjoining column, according to the census of 1831 and of 1841, is to be had for a shilling, and offers great facility to a master for making questions of this kind; as well as affording useful statistical information.

In teaching them superficial and solid measure, the following mode is adopted:—

They are first shown, by means of the black board, what a square inch, foot, yard, etc., is, by proofs which meet the eye; that a square of two inches on a side contains four square inches: of three inches on a side, nine square inches, and so on; or, in other words, that a square of one inch on a side, could be so placed on a square of two inches, as to occupy different ground four times, and in doing this it would have occupied the whole square, one of three inches, nine times: thus showing clearly what is meant by a surface containing a certain number of square feet, etc.

The same illustration with an oblong, say nine inches by two, three, etc., two or three drawings or diagrams of figures so divided are painted on the walls.

## VII.

### MEASURATION.

The teacher takes a cube of four inches on a side, divided into four slices of one inch thick, and one of the surfaces divided into sixteen superficial inches; to this slice of one inch thick, containing sixteen solid inches, add a second, that will make 32, and so to the fourth, making 64; so that they now have ocular proof so simple, that they must understand: that the superficial inches in a square, or rectangle, is found by multiplying together the number in each side; the contents of a regular cube by multiplying the number of superficial inches on one side by the number of slices.

To apply this:

The master tells one of the boys to take the two-foot rule (a necessary thing in a village school), measure the length and breadth of the school-room. Yes, sir.

Length 26 feet, breadth 16 feet. What is the figure? An oblong

—sides at right angles to each other. Multiply length and breadth—what is the area?

To another—Look at the boards of the floor; are they uniform in width? How are they laid? Parallel to each other. The breadth of the room you have got, and, as the boards are laid that way, you have the length of each board; measure the width of a board. Nine inches. Reckon the number of boards. What is the area of the room? Does it agree with your first measurement? If not, what is the source of error; the boards will turn out to be unequal in width.

The door—what is the shape of the opening? An oblong, with one side a good deal longer than the other. Measure the height—the width: now what number of inches of surface on the door?

The rule again. Measure the thickness. Now how many solid inches?

The door-posts. Measure the height, width; now the depth. How many solid inches of wood in one post? How many in the whole door-posts? How many solid inches in a foot? Turn it into feet.

In the same way they may apply the rule to find out the surface of a table, a sheet of paper, surface of a map, a page of a book, etc., but always making them do the actual measurement, first taking one child, then another.

Again the room—we have got the area—tell us how much water it would hold, if we could fill it as high as the walls; we have got two dimensions, what is wanting?—The height. We cannot reach up, sir.—Take your rule. Measure the thickness of a brick with the mortar.—About four inches... Measure the first three courses.—A foot, sir.—Reckon the courses of the wall.—Thirty-six.—Then the height is what?—Twelve feet. Now find out the solid contents of the room.

Find the surface and solid contents of a brick.

In fact, the two-foot rule is to the village school what Liebig says the balance is to the chemist.

Another practical application, which works well in giving fixed ideas of linear measure, is the following:

Take a hoop, say of two feet diameter; apply a string to the circumference; measure it.—Rather over six feet.—Another of three will be found to be nine, and by a sort of inductive process, you prove that the circumference is three times the diameter; when farther advanced, give them the exact ratio, 3.14159, which they will work from with great facility. That a child should feel and understand this mode of inductive reasoning is very important, and is one of the most useful school-lessons he can have.

Boys! make a mark on the hoop: let it rest on the floor, the mark being directly opposite the point which touches the floor; trundle it, stopping every time when the mark rests upon the floor, and let another boy make a chalk-mark where it touches; now take your two-foot rule and measure between each mark. What is it?—x feet, twelve feet, eighteen feet, etc.—And the hoop has been round how many times at each mark? One at the first, twice at the second, three times at the third, etc.—Now, you see, if you trundle your hoop over a piece of level ground, and reckon the number of times it has gone round, you can tell the length of space it has gone over.

How many miles to Winchester?—Nine, sir.—Measure the height of your father's cart-wheel, and tell him how often it will go round in going to market. Tell him he must not zigzag. The teacher should point out the sources of error. The philosophy of common life and every-day things is most attractive to children, and a book of this kind, if well done, would be a most useful one for our village schools.

This two-foot rule, and other appliances, setting to work both hands and head amuses, at the same time that it instructs, and gives a sort of certainty to their knowledge, and fixes it in a way that learning things by mere rote, never can.

(To be continued.)

### Summary of Hints to Teachers.

In our day education has received a prominence among subjects of study and discussion, which in days gone by it had not. To this its value justly entitles it. For the more it advances the more will civilization advance and society improve; the more will the comforts of life be increased and its ills diminished; and the more extended and thorough it becomes,—having the Bible for its basis,—the safer will life and property be, and the more stable and united, in promoting general welfare, will communities become.—Deserves it not, therefore, all the attention it can receive,—all the laudable efforts which may be made for its improvement and extension? And does not every one who heartily cooperates in its

promotion deserve the encouragement and thanks of his fellow-men?

The end and object of all education are the improvement of society, and the advancement of the true moral happiness of men.

The sentiment, so long tolerated in many parts of the world, that education may prove hurtful to the masses of society, and unfit them for their ordinary occupations, is fast dying out, or is obliged to hide its diminished mal-formed head, in the retreats of ignorance, superstition and vice. So general does the opposite sentiment now prevail—that from education there is no escape. Every class and grade of society admits its importance; and the great questions are—what kind and extent of education is the most suitable and effective for the public weal, and how is it to be best promoted?—That education which virtuously and healthfully sets in prolific motion, hearts, hands, and understanding, and best fits men for their several vocations, cannot, however, be very wide of the mark. But how it is to be given, or what the best system for conferring it, is still, and perhaps will be, in many points, a matter in dispute.

The object of the following summary views on education, is an endeavour to bring concisely, and in a practical systematic way, under the view of educators, such principles as are admitted to be sound and thoroughly practical in educating youth.

How a child should be treated on entering school is a subject, which needs far more consideration and even deep study, than is generally thought. On the way in which a child is dealt with, on his entering school, depends, not a little, not only his like or dislike to school, and school work, but his future success or want of it, through out the whole of his school history.—Let the teacher gain the affection and faith of his new neophyte, and he has gained what will do more, by skill and judgment, to secure his obedience, and attention—his self-efforts to please and to learn, than all the rules for school management or modes of teaching, he can adopt:

1o. First, then I would say deal with the mind of a child on entering school with the greatest simplicity and in a manner the most winning.

2o. In doing this, study well, its state of development, mould and capacity; and in training it, be guided as much as possible by this state.

3o. In commencing training the mind of the scholar, let simplicity, clearness, thoroughness, even in the most elementary things, be the guiding principles.

4o. I give the following as the cardinal points of education: 1o. The cultivating and disciplining of the several powers of the mind. 2o. The acquisition of knowledge. 3o. The capacity of readily and effectively communicating knowledge to others. 4o. The fourth point in education is, how schools can be so conducted, and studies carried on as to make the scholar take as much interest as possible in his own education and make him a earnest and successful self trainer. 5o. The next and last great object in education is, the habit of applying the knowledge acquired to useful purposes.

In carrying out these points the following hints and remarks may not be undeserving consideration.

§ 1. The first great object to be sought in education is, the cultivating and disciplining of the powers of the mind.

On the continuous well grounded cultivation of these all the knowledge afterwards communicated is more readily and profitably received, more easily understood, and more permanently retained. The powers of the mind can be developed and strengthened only by exercise or discipline; and this discipline must be enforced upon the pupil by certain exercises or employments specially adopted for the purpose. By this step, if rightly carried out, a short and sure path is cut out and cleared out, for the successful and intelligent advancement of the pupil in rapidly and permanently attaining any branch of learning. On the thorough disciplining of the mind at the very outset of its educational career, depends the educator's success in giving it right mould and undying energy,—thus fitting it at the very commencement of its school work, to become its own educator and safe self conductor amid all its future studies. Let no teacher, therefore, who wishes to be a successful trainer of youth, and an honour to his profession, neglect or defectively discharge this part of his work. Nothing tends more to ensure his success than earnest and well directed attention to this part of his duty.

§ 2. The second great object in education is the communication of knowledge.

Improved methods of teaching, where adopted, have greatly changed the modes of communicating knowledge—rendering them far more effective and profitable.

It is to be much regretted that the ordinary methods of teaching are still so tenaciously adhered to. I attribute this, principally, to the busy officiousness of many who assume the office of educators

and teachers, without due qualifications, and with little or no knowledge of the science of teaching. Such teachers render the child a mere magazine of collected words, truths and statements, *little understood*—collected by mere mechanical means,—which furnish him with little aid or direction in his studies. The more ill, digested knowledge a man thus collects the more oppressive will the burden be to him, and the more painful his helplessness. Instead of pursuing such a course I would recommend to teachers—nay insist upon it—that from the time the child begins to learn the very initiatory part of his education, they endeavour to bestow the utmost care upon the cultivation of his faculties—especially the conscience, the understanding and the judgment. It is with pain that I examine schools, in which I find, the very opposite method of teaching tenaciously—nay in some schools—*pertinaciously*, adhered to. No effort is made to make the child read with the understanding. The defective nature of this method is as obvious as it is injurious; for the words generally remain upon the memory while the pupil is almost totally ignorant of the truths they contain, or the ideas they represent.—They are in fact mental lumber—collected by the painful exercise of the memory without the aid of the understanding.—The method of teaching grammar, still pursued in the majority of schools, strikingly illustrates this.—I have examined on grammar thousands, who, though they could with much verbal accuracy, repeat large portions of their books, yet did not appear to have but a very dim and imperfect knowledge of any portion they had committed. Hundreds of words are daily reiterated, the meaning of which they know not. And this is the case with the greater part of what they read or commit. It has been asserted, and, perhaps, with truth, that the committing of words to memory, while they are not understood, prevents them from being ever afterwards so readily and correctly understood.

The most effectual way to correct this defect in teaching is by training the pupil to a thorough knowledge of words and their various applications, separately and in connexion, by a variety of exercises. The following are much approved of, and found to answer remarkably well, when intelligently and skilfully employed: 1o. Verbal and etymological exercises; 2o. General verbal exercises; 3o. Connecting exercises; and 4o. The analytical and synthetic exercises.

By these different exercises, carried on, both orally and in writing, the meaning of words and the truths taught, are so permanently imprinted upon the mind of the pupil as to be quite familiar, and at his command at all future times. The advantage which this gives to the pupil in pursuing his studies are many and great.—1o. The verbal and etymological exercises familiarize him with the meaning of words in their separate and combined state; and this enables him to extract, from every lesson or passage read, every idea it contains. The importance and value of these exercises cannot be too deeply impressed upon our teachers, nor its general introduction into our schools too much insisted on. Let them reflect that the whole work of education is carried on by influencing mind by mind; and that the main channel by which the influence is effected, is *language*. The scholar can make no advancement but just as he understands the words of his book and the language of his master.

2o. The general verbal exercises enables him to reconstruct the passage of his lesson by again allotting to each idea its proper place and connexion. The intention of this exercise is very simple. The verbal lays the foundation of the knowledge of any passage in the mind of the scholar, but gives him not a comprehensive view of it as a whole. This is done by the general and connecting exercises, which have reference to sentences rather than words. By verbal questioning the mind receives rather a microscopic view of truths; by the general questioning it is enabled to take a telescopic view of truths as embodied in sentences.

In order to form a general exercise, it is necessary to take only one question from each leading idea of a sentence, should it contain more than one. Often one question only from a sentence is sufficient. But the questions should be so chosen as to elicit the distinguishing features of sentences.

The general should always form part of the verbal exercises; but the verbal should not form part of the general. Some times passages are so well understood, as not to require the teacher to enter into verbal minutiae. When the teacher knows this, and yet is anxious to bring the whole passage or passages before their view, he can call up every verbal idea by means of the general exercise; and when the children are called upon to think on the whole, the teacher will find little difficulty in making them perform all the other exercises upon the passage or passages.

3o. The object of the connecting exercises is still more general. It is to enable the pupil at a glance to perceive the meaning of the

whole connectedly. This exercise needs some farther explanation. It is turning previous exercise to account. It is training the pupil to unite the parts into a connected and dependent whole; and is an excellent exercise, not only for making the pupil understand how ideas should be conjoined in speech or written language, so as to show their reciprocal connexion, but also a valuable preparation for essay-writing or composition.

40. The fourth or analytical and synthetic exercises, is another very important part of interrogative training. It communicates truths in portions, separating one part from another till each one be understood, and again putting them together in proper sequence. Separating sentences into their component parts, and then putting them together, enable the scholar to take a discriminating view of every subject, in all its parts, detect any discordancy in these, and more readily trace false premises and erroneous conclusions.—But, let it be well understood, that the teacher himself has always previously thought out the subject in a clear manner; and this is what every educator should be able to do. Doing this, puts him in a condition to show to his pupils the different parts of every lesson—separately and combined—in a manner far more clear and intelligent, than if the lesson before hand had not received his special consideration. When a section or lesson is thus sifted, decomposed and again put together, pupils should be made to give orally or in writing an outline of the whole passage, remembering always that if we are at pains to work truths into the mind, equal pains should be taken to again work them out.

I farther remark, that the skilful application of these exercises, in connexion with the others, seldom or never fail of success, when intelligently and skilfully followed out.

§ 3. The third great object in education is training the pupil to speak with ease and with a command of words—thus enabling him readily to communicate his own acquired knowledge.

To enable him to do these is more than an accomplishment. It is a valuable—an essential acquisition. If cultivating the mind, so as to give it a command of ideas, facility in collecting and rapidity in arranging them, be considered of paramount importance in education, the farther training of youth to a ready and an easy flow of language, in communicating them, will surely be admitted as of no less importance. In education both should be considered inseparable.

One of the most successful methods for attaining the latter is by means of paraphrastic exercises in connexion with copious explanations, recitations, and essay-writing. By explanations the pupil is taught to find the meaning of words in sentences, not by consulting a dictionary in the first place, but by the general meaning of the context. It is only when this fails that he has to go farther. When he has found the meaning of words, his farther exercise is to remodel the sentences, by inserting his own explanations or definitions in the place of the words explained. If the meaning remains the same he is right, but if another shade of meaning be the consequence, (which is easily detected,) he must find another explanation more in accordance with the sense. When each principal word in the sentences of the passage has been thus changed it will be considerably remodeled; yet, if done correctly, the same ideas and the precise shades of meaning will be preserved throughout.—The mental exercise, which this task forces upon the pupil is very extensive and very valuable. When he is made mentally to read the sentence, and at the same moment audibly to rehearse the paraphrase, he has to consider the various meanings of each word, rapidly to decide on the proper one, and at once to embody that meaning in proper, but different words, which he has either to choose for the first time, or to recall to remembrance; and all this he has to give audibly, grammatically, and without hesitation.

The use of this exercise in training the young to composition, is also most valuable; and as a whole, may be considered as one of the most important features of our improved systems of education.

With respect to explanations or study of words, I would farther remark, that this part of education is not yet sufficiently carried out. In some schools it is altogether neglected; in others, some attention is paid to it; but in only a few is it made a distinct branch of practical study. Yet even in these schools, the study is confined too much to words unapplied.

Words separately do bring up ideas and things for the observation of the mental faculty,—and very varied and wonderful are the associations which oftentimes a single word will raise,—but still that word, however, well understood, or suggestive, is not language. To make it so, it must receive its proper place in composition. This is what gives it its correlative and special value. However, well a scholar's mind may be stored with words, they are of value to him only so far as he can correctly apply them. It is in this respect that words can be made gainful in enriching the mind with

mental associations. Instead of directing the pupil's attention and occupying his time in studying terms and the dry principles of language, only in their unassociated state, the great aim should be, to give his mind a command of itself and of its stores, by the study of vocabularies as formed into language. It is then only that words become truly instruments of thought and records of the myriad elements of our consciousness. We say then that the most effectual way to train the minds of youth to self-command, and to a correct choice of words in expressing their ideas in an easy flow of expressive language, is by such practical exercises, as we have recommended.

§ 4. The fourth point in education is, how schools can be so conducted, and studies carried on so as to make the scholar take as much interest as possible in his own education, and make him an earnest and successful self-trainer.

I consider this as one of the most important points in education. Inattention to it, or not making it a subject of more earnest study, is a serious—an unpardonable oversight with our teachers. How much does their success depend upon it? How greatly does it tend to remove the many difficulties with which they have to contend in instructing youth; polish the asperities of the path of study to the pupils, and aid not a little in making their advancement more steady and continuous?—Earnestly, therefore, would we beg to draw their attention to this part of their duty, entreating them to make it more a subject of thoughts.

The following hints are offered for their consideration:—

10. Make the exercises of the school pleasant as well as profitable.

This is the readiest, the easiest, and one of the most effectual means to make the pupil like school and school work.

When school exercises are made pleasant they seldom fail, with the intelligent teacher, to be profitable too; because children are delighted only in so far as their minds or feelings are engaged.

20. Be always on the watch to secure and keep up their attention. The most likely way to do this is to keep them always busily engaged in the exercise of their understandings. The minds of children cannot remain inactive; and, therefore, if the teacher produces nothing to exercise their judgment, they will find out something for themselves.

30. Study especially their tempers, dispositions, tastes, and different capacities. A correct knowledge of these will greatly aid you in managing and teaching them.

40. Great care should be taken that no part of their work be repulsive, or that their minds be not over tasked. The tendency of either is to discourage, and if long continued, to create a dislike to study, and a stolid wayward indifference to self improvement.

50. Let system pervade the whole work of school. As every school system applies, less or more, to a complexity of objects, and a diversity of ends, all its parts should, therefore, be so arranged and adjusted as to make them coalesce.

A want of system—properly adjusted—invariably tends to produce inattention, idleness and disorder. Wherever, these gain a footing in a school, there is an end to real progress. Gossip and play will then become the subjects of study and practice. To prevent such habits, let system govern the school, and let all its parts be worked with consistent firmness.

60. Treat pupils with uniform sympathy and tenderness. Such treatment will awaken love and confidence in their hearts. Faith and love lie at the foundation of education. Whenever, they become dominant in a school their influence will soon become manifest in the pleasure which pupils take in their studies and in self improvement. But to take advantage of a state of school so favourable for successful teaching, the whole work of training and instruction should be carried on with intelligence, activity, and professional skill.

Instruction should be given in a way clear and inviting, and in a spirit calculated to stimulate pupils to intellectual mental activity. But great care should be taken when the mind is thus roused and quickened, and a true desire for learning created, that their efforts are so guided as to ensure success, as this respects both the moulding of the mind and the training of its powers, as well as its intelligent advancement in knowledge, at each step of advance.

70. When a school is brought into a state of training, such as this, with what comparative ease, and advantage can the teacher make his instructions thorough, and impressions on the minds of his pupils deep and permanent!—But carrying on—and intelligently—the education of others, always supposes that the educator is keeping his own intellectual powers in a marshalled state, always prepared for action. The work of which he has made choice needs no small degree of continuous effort, teaching skill, and judgment, to carry it on.

§ 5. A capacity for using knowledge, and readiness in applying

it to useful purposes is the fifth and principal object desired in education.

This may well be called the principal object of education. It is the dexterous use of surgical instruments which alone constitutes surgery; it is the ability to speak and write grammatically, which alone deserves the name of grammar; and in like manner, it is the capacity of using and applying knowledge to useful purposes which alone deserves the name of education.

The method by which this great object is accomplished is not less easy than it is effective. By the simple operation of deducting practical lessons from subjects taught or facts communicated, whether religious, moral, natural, &c., the pupil is let into the important secret, that he himself is personally, and, therefore, deeply interested in all that he is taught. He is trained to perceive that every circumstance or piece of information communicated to him has a use, and may be used; that by a little attention and care on his part, he may take advantage of its utility, and turn it to some good purpose in his own experience. There is no limit, to the power of this simple principle. It embraces every subject which by any means can be rendered useful; and it is a most valuable and accurate test by which to try the value of any branch of education. If the subject taught be at all useful this principle in a system of education at once detects it, and trains the mind of the pupil of himself to perceive, when, how, and for what purpose it should be used. He is by this means taught the power of giving a new and an extended value to every thing in nature and impressing the stamp of utility upon every truth, and turning it into a coin, current and valuable, in all circumstances and on every occasion.

The application of what is taught must not be understood as confined to a few branches of education. It extends to the whole circle of the sciences.

One of the greatest defects in our systems of teaching is that we bring not within the limits of a child's education, and fully exercise him upon, the practical and useful parts of all the sciences. The scholar should be carried through them all so as to be able to perceive and remember the various uses he is to make of his inferential lessons in common life.

In every circumstance which occurs, he should thus be taught not only what he should do, but also how he should do it, and why it should be done.

I conclude my summary of hints in the language of Orinthus Gregory: "Truths should be, as far as possible, grouped upon principle, and with prospective reference, from the most elementary onwards, they must be received, not inertly, but with an attention stimulated and kept alive by a sense of their value; pass ve habits, must be replaced by continuous mental activity and persevering search after knowledge; the successive topics of instruction must be received as part of a whole; and each and all must be thoroughly comprehended, from the most elementary onwards and permanently secured by frequent retrospection and revision, while the faculty of looking forward, and the intellectual instruments for going forward, are gaining fresh strength from every new acquisition."

These summary views of education, and of the principles of intelligent and efficient teaching, will be found to comprehend much of what is admitted to be the leading principles of sound teaching. And wherever they are intelligently and skilfully applied in teaching youth, educators will not fail to prepare youth for the various activities of life,—not as mere routine passive agents,—but as active men, sound reasoners, and useful intelligent members of society.

JOHN BRUCE,  
Inspector of Schools.

## OFFICIAL NOTICES.



NOTICE TO THE SECRETARIES OF BOARDS OF EXAMINERS.

Messrs. the Secretaries to the Boards of Examiners are requested, when sending in the lists of teachers, to class the names in alphabetical order. They are, moreover, requested to send copies in duplicate of said lists.

### CATHOLIC BOARD OF EXAMINERS FOR THE DISTRICT OF MONTREAL.

Messrs. Pierre Urgelo Dupras and Thomas Mathews, have obtained diplomas authorising them to teach in model schools.

Misses Mathilde Demers, Sarah Ducharme, Adeline Desroches, Julie Desnoyers, Lucie Dupont, Christine Coté, Agnes Cardinal, Olympe Clark Mary Connolly, Eusebe M. Chenevert, Victorie Nichols, Antoinette Boire, Céline Benoit, Angèle Belleville, Marie-Louise Benoit, Cléopâtre Boire, Anicèle Valois, Phébé Vincent, Héloïse Ma'o, Julie Mongeau, Arseline Marsant, Anastasie Gauthier, Philomène Généreux, Ursule Perrault, Clothilde Poirier, Adélaïde Rou-sen, Emélie St Denis, Ann Smith, Marguerite Ouellet, P. Lanctot, Philomène Laviolette, Céline Lacasse, Emélie Lumina Lavoix, Denise Loranger, Jane Byrn, Marie Souchereau, Sophie Kortu, Margaret Finn, Catherine Finn, Aurélie Trudeau, Marie Robert, Elisa Kelly, Marie Johnson, Mathilde Tardif, Marie Lapointe, Messrs. Joseph Desnoyers, Alexandre Goumont, Pierre Joly, Maurice Lavigne, Martin Moore and Nérée Tetreau, have obtained diplomas authorising them to teach in elementary schools.

F. X. VALADE,  
Secretary.

### PROTESTANT BOARD OF EXAMINERS FOR THE CITY OF MONTREAL.

Mr. Angus McPherson; Miss Jane Pringle; Messrs. David Dunsmore, Thomas Burton; Misses Amanda Lalanne and Sarah Paine; Mr. Samuel Montgomery; Misses Mary Kelly, Adrienne McNaughton, Susannah Paine, Elizabeth Brown, Adeline Ames, Sarah Jane Fisher, Leona Mills, Isabella McGarvey, Cynthia Towns and Ann Corrigan, have obtained diplomas authorising them to teach in model schools.

A. N. RENNIE,  
Secretary.

### CATHOLIC BOARD OF EXAMINERS FOR THE DISTRICT OF QUEBEC.

Mr Daniel McSweeney has obtained a diploma authorising him to teach in model schools.

Misses M. O. R. Piteau, A. V. Rinfret, C. Esther Caron, Philomène Jacob, H. E. C. Guay, Louise Bouchard, H. Georgina Bélanger, Sophie Lehoullier, Victoire Talbot, M. Emma Picard, Eulalie Bélanger, M. Caroline Couillard, M. P. V. Fournier, Lucie Trépannier, Adéline Rouleau, Vitaline Boucher, Ellen Lynch and Mr. John Fuyford, have obtained diplomas authorising them to teach in elementary schools.

N. LACASSE,  
Secretary.

### BOARD OF EXAMINERS FOR THE DISTRICT OF KAMOURASKA.

Mr. A. J. O. Montruy; Misses Caroline Chevreffils, Arthémise Fournier, Ursule Martel, Clarisse Parant, Aglaé LeBel, Elise Landry, Mathilde Tardif, Céline Pelletier, Luce Desjardins, Hyppolite Lavoix, Emma Puize, Marie Danjou, Josephine Parant, Gracieuse Langis, Virginie Jaurin, Hauguippe Gagné, Adélaïde Barville, Julie A. St. Laurent, Marie Lizotte, Ursule Lizotte, Arthémise Dumont, Elizabeth Michaud, Eimire Danjou, Appoline Lafrance, Justine Ouellet, Elizabeth Lévesque, Floré Dubé, Philomène Dumont, Eugénie Bélanger, Alphonsine LeBel and Ludgarde Béchard, have obtained diplomas authorising them to teach in model schools.

P. DUMAIS,  
Secretary.

### SITUATIONS AS TEACHERS WANTED.

Mr. James Lockyer Biscoe, residing at Rivière St. Pierre, provided with a diploma for elementary school, can teach English, and the rudiments of the French language.

Miss Couch, a catholic, and provided with a model school diploma (McGill Normal School), is desirous of obtaining a situation as teacher. Can teach English and the rudiments of French.

Applications to be addressed to the Education Office.

Mr. Miller, professor provided with a diploma from the University of Bonn, will give private lessons in the French, German, Latin and Greek languages; in algebra, geography, writing. He is also desirous of undertake the direction of a model school, and for this purpose intends to pass the necessary examination at the next meeting of the Board of Catholic Examiners for the City of Montreal.

For further informations apply at No. 23 Dorchester street, or at the Education Office.

Mrs. Cauvin (widow) from Paris, is desirous of a situation as teacher either in a school or in a private family. The highest recommendations can be given. Apply to this office.

# JOURNAL OF EDUCATION.

MONTREAL, (LOWER CANADA) OCTOBER, 1859.

## Report of the Chief Superintendent of Public Instruction for Lower Canada for 1858.

Translated from the French by the translators to the Legislative Assembly.

Toronto, April 14th 1859.

TO THE HONORABLE PROVINCIAL SECRETARY.

Sir,—I have the honor to present to you my fourth annual report on the state of public instruction in Lower Canada.

In my two last reports I offered the suggestions which appeared to me most likely to contribute to the great end of perfecting the system of public instruction, in order that our children may stand on equal terms in this respect with their contemporaries in other countries. I insisted as strenuously as befitted me, on the urgent importance of the measures which I thought it my duty to recommend; and as it would be needless to repeat the facts and arguments which I then adduced in support of my suggestions, I shall content myself on the present occasion with stating that the experience of the year which has just terminated, has only strengthened my opinions and impelled me to renew my recommendations of the previous year.

As the scholastic year does not terminate before July, I cannot annex to this report those of the directors of the normal schools for the year commencing September 15th 1858. The reports on those institutions for the year 1857-58 were published with the report for the year 1857. I have only to state that their success, during the present year, has been perfectly uninterupted.

The Jacques-Cartier normal school had, on the return of the classes, 50 pupils, all pupil-teachers. The department of female pupil-teachers was not yet organized. According to the statement of the accounts of that institution up to 31st December last, a balance of \$2240 remained on hand. That sum added to the savings of the present year, and its share of the increased grant recommended by me, will enable me I trust, shortly to secure to the district of Montreal advantages similar to those already enjoyed by the district of Quebec.

The McGill normal school had on the return of the classes 71 female pupil-teachers and 6 male pupil-teachers. The number of pupils in the model schools annexed to them is 300; and an infant school lately added on the plan of the *salles d'asile* has already 120. A building has been erected for this latter out of the income of the model schools. The McGill normal school had on the 31st December last a balance on hand of \$546 46.

The Laval normal school had on the return of the classes 31 pupil-teachers, and 52 female pupil-teachers. This school was on 31st December last in debt to the amount of \$3213 17, an unfortunate confirmation of my prediction of the preceding year, and sufficiently explanatory of our delay in establishing a department of female pupil-teachers at the Jacques-Cartier normal school.

An examination of the tabular statistics of the three schools will show that the business of instruction has made all desirable progress in them. We owe it to the kindness and talents of Mr. Ossaye, that the pupils of the Jacques-Cartier normal school have been enabled to follow an excellent course of lectures on rural economy delivered by that zealous agriculturist. Public lectures on general history by Mr. Desmazures of the Seminary of St. Sulpice and on French grammar and philology by M. Devisines, an ordinary professor attached to the school, have been attended by many persons who do not belong to the institution.

The statistics of the department shew in the present year rather greater progress than that of the last, and nearly equal to that of the year 1856, a part of which was as I before observed, more apparent than real, being due chiefly to the unusual exactness with which the statistics had been kept. The following small table will shew the truth of this.

	1853.	1854.	1855.	1856.	1857.	1858.	Increase over 1857.	Increase over 1856.	Increase over 1855.	Increase over 1854.	Increase over 1853.
Institutions.....	2352	2795	2869	2919	2946	2985	39	66	116	190	633
Pupils.....	108254	119733	127058	143141	148798	155986	7188	13845	28928	36253	47702
Contributions.....	\$ 165848	238032	249136	406764	424208	459396	35188	52632	210260	221364	293548

Thus we perceive, that the increase in number of pupils, while only 6557 in 1857, has been 7188 in 1858. The entire increase in the contributions since 1856 has been \$52,632, a considerable difference, shewing unvarying progress.

I should add that the arrears remaining unpaid of the assessments shew a gradual decrease every year; and that the Inspectors (well supported by the department) constantly strive to secure the payment of them, and with much success.

The following table of the number of pupils studying the several most important branches of primary instruction shews results still more striking than those of former years. The increase of 5271 in book-keeping, being nearly 100 per cent, of 16169 in history, and of 6669 in grammatical parsing claims particular notice.

The census of children between five and sixteen years of age shews the number to be 247,204; this being considered with reference to other information in my hands, appears as in former years, to fall short of the reality. A better approximation, I am justified in believing would be \$20,000. The number of children who attend the schools within their respective municipalities (ex-

cluding therefore a large number of those who attend superior institutions, and all children under five years of age, whom particular information shews to be more numerous than I formerly believed) is shown to be 134,579.

The number of children between seven and fourteen (the limits fixed by law as those within which attendance at the common schools is compulsory) is set down as 157,819, of whom 102,963 attend the schools, being nearly two-thirds, and far exceeding the proportion of former years.

Table B in the appendix, containing a statement of the contributions voluntary or involuntary for the year shews, as I before said, a very remarkable increase. This I shall examine in its details, and it is proper to remark that the table does not comprehend the payments made to the superior institutions for board or tuition. The assessments levied over and above the compulsory contributions, and the special assessments, exclusive of those made for the erection or repairs of school-houses, amount to \$88,372, an increase of \$9,534 over the amount of the preceding year. The sums levied for the erection and repairs of school-houses, which in 1857

amounted to \$20,928, amount in 1858 to \$24,646. The monthly fees which in 1857 were \$208,500 amount in 1858 to \$231,192. The subjoined statement of the increase of this species of contribution in the three last years will serve to show the imprudence of giving effect to the motions made from time to time in the legislature to abolish this kind of tax:—

1856.	1857.	1858.
\$173,384	\$208,500	\$231,192

This would at once deprive the cause of public education of a very important portion of its funds, and that without the least necessity, as the department does not insist on the collection of the monthly fees in localities where good and valid reasons can be alleged why the rate-payers should be relieved from the burthen; and provided a sum be raised, in addition to the compulsory contingent, equal in amount to the tax which the children would pay. The argument employed to support the system of gratuitous schools is therefore inapplicable to our legislation, inasmuch as the children of the indigent poor are admitted gratuitously on the one hand and on the other the children of those who are able, do pay the

capitation does whether they attend the schools or not. In many of our parishes, this obligation has had the effect of rendering the parents much more careful to send their children to school. Without discussing the question of the benefits to be derived from tuition altogether gratuitous, (free schools) it is not useless to remark that the Congress of Public Beneficence lately held in Europe, has expressed an opinion adverse to that system, which, though excellent as an exception, seems at the present day to have lost favour as a general rule.

As in former years, I append to this report tables of all the institutions of superior education. I shall not enter into statistical details which I gave in great length in my two last reports, in order to furnish a very perfect idea of the organisation of those institutions, their modes and objects of tuition and their progress. By comparing the observations of former years with the statistical tables of the present year, a correct idea may easily be formed of the slight deviations which have taken place.

The sum of £17000 has been distributed among these institutions as shewn in the two special reports on the subject in the appendix. Those institutions, however, which had not transmitted to me the

	1853.	1854.	1855.	1856.	1857.	1858.	Increase over 1857.	Increase over 1856.	Increase over 1855.	Increase over 1854.	Increase over 1853.
Pupils reading well. . . . .	27367	32561	43407	46940	48833	52099	3266	5159	8692	19238	24732
“ writing . . . . .	50072	47014	58033	60086	61943	65404	3461	5318	7321	18390	15332
Learning simple arith . . . . .	18281	22697	30631	48359	52845	55847	3002	7488	25216	32950	37566
“ compound “ . . . . .	12448	18073	22586	23431	26643	28196	1553	4745	5610	10123	15748
Book-keeping . . . . .		799	1976	5012	5500	10771	5271	5659	8795	9972	.....
Geography . . . . .	12185	13826	17700	30134	33606	37847	4241	7713	20147	24021	25662
History . . . . .	6738	11486	15520	17580	26147	42316	16169	24736	2676	30830	35578
French Grammar . . . . .	15353	17852	23260	39328	39067	43307	4240	3979	20147	25455	27954
English “ . . . . .	7066	7097	9004	11824	12074	15348	3274	3524	6344	8251	8282
Parsing . . . . .	4412	9283	16439	26310	34064	40733	6669	14423	24293	31450	36321

reports as required by law in the month of July, were omitted in the first distribution, and the greater number of them incurred by their tardiness a considerable loss in the amount of the money granted. It has been made a condition to all colleges and academies which share in the government grant, that they shall use seats with backs in the class-rooms and studies, and I have reason to believe that this injunction will be attended to.

I have found it impossible to award any portion of the grant to any of the new institutions which have sprung up in the counties where several such already existed; and in order to be able to recommend grants in favor of those which have been established in localities where there were none previously, and to afford aid to the numerous superior primary schools, which are destined to act so important a part in our country districts, I have been compelled again this year to recommend a deduction to be made of two and a half per cent from all grants to institutions which exceed one hundred dollars. I have therefore to express my regret that I am unable to distribute more considerable aid to colleges and academies, and if it were possible, I should still more regret my inability to increase the grant to the primary schools.

It is fortunate that the impulse first given is still active, and that the sacrifices made by the rate-payers go far to supply the insufficiency of my resources. Moreover, I always cherish a hope that the government and the legislature will, whenever the state of the

public finances shall enable them, place at my disposal more sufficient means of carrying out the various improvements, the necessity of which I have shewn in my two last reports.

The reports of the Inspectors which will be found in the appendix, represent the same difficulties and suggest the same remedies as those of former years. The obstacles to be overcome are still the same:—

1. The conduct of many of the Commissioners, elected as they are on account of their disposition to save the money of rate-payers, rather than for their qualifications for so important an office.
2. The excessive number of schools, and the insufficiency of the salaries paid to the teachers.
3. The too great facility with which the Boards of Examiners grant diplomas to incapable teachers, particularly females.
4. The want of maps, pictures, globes, books and other necessary articles, and the insufficiency of the furniture in many school-houses.
5. The lack of uniformity in the choice of school books.
6. The too great range of the scheme of tuition in many elementary schools.
7. The indifference of many Commissioners, who neglect to visit the schools.
8. The remissness of the children, particularly of those between 12 and 16 years of age, in attending school.

The progress made consists in the abatement of these evils in many municipalities; and, to whatever extent they may still be found in many, we congratulate ourselves, that, though we do not in all places reap the full advantage of the law under which we act, its general justice and liberal intent are well understood and appreciated.

The necessity of education, its advantages, moral and physical, are now deeply impressed on all men's minds, and the few obstacles still remaining capable of arresting our progress, are mainly material and the effect of the badness of the times.

I have the honor to be, Sir,

Your very humble and obedient servant,

(Signed,) PIERRE J. O. CHAUVEAU,

Superintendent of Education for Lower Canada.

### NOTICES OF BOOKS.

MONTEITH.—French without a Master, a course of lessons in the French language, on the Robertsonian Method, by A. H. Monteith, Esq., first Canadian from the nineteenth American and eighth Brussels editions, 62 p. in-8. John Lovell, Montreal, and W. Caverhill, Toronto.

It seems from the number of editions this book has gone through in the United States and in Belgium that it has been found very useful. The whole book consists in conversations all made out of a single little story, every sentence and word of which is commented on, so as to elucidate a great many grammatical and philological points.

The work is neatly printed and in Mr. Lovell's best style, which is saying much for its elegance. It contains a great deal of valuable information and is grounded on a comparative study of the two great languages of the world.

THE FRENCH GENDERS taught in six fables, being a plain and easy art of memory, by which the genders of 17,518 French nouns may be learned in a few hours, reprinted by Mrs. Blackwood; 55 p. in-32. John Lovell, Montreal.

It is difficult to understand how any one who is not born of French parents and has not from his infancy learnt to distinguish masculine from feminine words, in a language where there is no neuter gender, should be able to master this great difficulty. The book before us contains a very ingenious scheme to get over this stumbling block. Whether any plan of the kind can be altogether successful, must be left to experience. We are rather inclined to believe that the French, like every other language, requires constant practice to be spoken even tolerably, and the difficulty about the genders is certainly one of the most obvious reasons why it should be so. The great drawback to English pupils who are trying to learn French in this country, is that they will insist on learning it as an accomplishment only; that they will not set to work in earnest and adopt the only real mode of improving which is frequent and habitual conversation. Having recorded this caveat, we must speak without any other restrictions of the utility of the small volume before us, and we shall add that Mrs. Blackwood deserves great credit for placing it before the Anglo-Canadian public. It has besides the recommendation of one who having given the greatest part of his life to the tuition of French, in English communities, is perfectly competent to pronounce on its merits, we mean Professor Fronteau. The following extract, from the introduction, shall give a better idea of the book:

"The system by which the genders of the French nouns may be most readily and firmly fixed in the memory, begins by classing them by their final syllables. Thus there are 643 nouns ending in *er*, which are all masculine except two: there are 144 ending in *oir*, all masculine without a single exception: 70 in *al*, 24 in *ais*, and 83 in *ard*, all masculine with out exception: and 305 in *et*, all masculine except one word. Therefore, if these six endings can be fixed in the memory, as masculines, the learner will know the genders of 1269 nouns.

But the difficulty is to remember long lists of terminations, and to fix in the mind the gender of each. There are many grammars where whole pages are filled with terminations and exceptions, but they contain nothing to assist the memory,—no clue by which the ending is connected to its own particular gender. Those who learn from these books may perhaps remember that all nouns ending in *ais* are of the same gender; but there being no guide or catchword to assign *ais* to the masculines, they must be continually in doubt.

My plan to help the memory is this: I have introduced the masculine endings in three fables, the actors in which fables are masculine. Every noun in these three fables is masculine, and no nouns are admitted into them but such as give the rules. Thus the endings mentioned above are given in the first four lines of the first fable, which a pupil can easily learn in half an hour, and thus acquire the genders of five thousand seven hundred and ten French nouns."

There is at the end a list of words the meaning of which is different by making them masculine or feminine. We subjoin a few of them, to show what very awful misnomers one can make for want of attention to the genders, when speaking French: *un cartouche*, an ornament in designing, *une cartouche*, a cartridge; *le greffe*, the office of the clerk of a court, or the register of a notary, *la greffe*, a graft; *un livre*, a book, *une livre*, a pound-weight; *un mémoire*, a bill or a memoir, *la mémoire*, the memory; *un mode*, a mood or accident, *la mode*, fashion or custom; *un mouk*, a model or pattern, *une moule*, a shell fish; *un mousse*, a ship boy, *la mousse*, moss or froth; *un page*, a page, an attendant *une page*, a page of a book; *un paillassé*, a theatrical clown, *une paillassé*, a mattress; *un poêle*, a stove, a coffin-pall, *une poêle*, a frying-pan; *un poste*, a situation or office, *la poste*, the post office, the mail; *un somme*, a sleep, a nap, *une somme*, a sum of money, *un souris*, a smile, *une souris*, a mouse; *un trompette*, a trumpeter, *une trompette*, a trumpet; *le vague*, the vacant space, something which is vague, *la vague*, a wave; *un voile*, a veil, a cover, *une voile*, a sail.

PROVANCHER.—Traité de Botanique à l'usage des écoles, par M. Provancher, curé de St. Joachim; 118 p. in-12. St-Michel et Darv., Québec.

This is, we believe, the first work of the kind ever published in Canada. It contains many useful references to the Canadian Flora and is illustrated by 84 wood cuts.

## MONTHLY SUMMARY.

### MISCELLANEOUS INTELLIGENCE.

—We are sorry not to find in any of the English papers a more extended biography of Sir William Eyre, than the following one. His Excellency and Lady Eyre had left in Canada a large circle of friends by whom the melancholy intelligence of the death of the late commander, although expected, has been keenly felt. During his stay in Montreal and also while Administrator of the province, Sir William Eyre gave many proofs of zeal for the promotion of education, and our readers have not forgotten his speeches at the inauguration of the two Normal Schools in this city, and at the public examination of the McGill Normal School.

"We have to record the death of Major General Sir William Eyre, K. C. B., late in command of the forces in Canada, who died on 8th Sept., at Bilton Hall, Warwickshire, at the age of 53. The gallant General had been in bad health for months past, and was in consequence of illness compelled to resign his command in North America, in which he was succeeded last June by Major General Sir William Fenwick Williams, of Kars. The deceased entered the army in 1823, and after serving in the 73rd Regiment in Canada, of which regiment he was Major, he proceeded with that gallant corps to the Cape of Good Hope, and while there greatly distinguished himself in both the Caffre wars as Lieut. Colonel. In acknowledgment of his eminent services in the last and previous war, he was made a Companion of the Order of the Bath, promoted to be Colonel in the army, and appointed an Aide-de-Camp to the Queen. On the military force being sent out to the East the deceased was appointed to a brigade of the third division of the army, which he ultimately commanded, with the local and temporary rank of Lieut. General. He was present at the battle of the Alma, the battle of Inkermann; commanded the troops in the trenches during the battle of Inkermann, and remained in the Crimea until the fall of Sebastopol, for which he received a medal and clasps. In 1855, he was created a Knight Commander of the Order of the Bath, was made a Commander of the Legion of Honor, a Knight of the Imperial Order of the Medjidie of the 2nd class, and was among the General officers of the army who received the Sardinian war medal. After his return home in June, 1856, he was selected by the Commander-in-Chief to command the troops in Canada. His commissions bore date as follows:—Ensign, 17th April, 1823; Lieutenant, 5th November, 1825; Captain, 20th May, 1827; Major, 19th July, 1830; Lieutenant Colonel, 12th November, 1847; Colonel, 28th May, 1853; and Major General, December 12th, 1854. The late General was one of the field officers in the receipt of the rewards for distinguished or meritorious services. Sir William was second son of the late Vice-Admiral Geo. Eyre, K. C. B., by the third daughter of Sir George Cooke, Bart., of Wheatey. He married, in 1841, Miss Bridgeman Simpson, third daughter of the late Hon. John Bridgeman Simpson."

—Two "blue books" have recently been published in England by order of Parliament, somewhat similar in their character to the four volumes on the "Commercial Relations" of the United States, from which the London Journals compile some interesting statistics. It is said for instance that Austria and her dominions have increased in population from 36,950,547 in 1846 to 49,411,309 in 1855; the taxes which yielded £21,769,931 in 1851, in 1856 produced £27,316,227. Between 1850 and 1855 the value of the imports rose from £15,895,549 to £23,640,491, and the exports from £10,484,746 to £23,250,870. The tonnage of her shipping advanced thirty-seven per cent. from 1849 to 1856. Her mineral products

valued in 1851 at £2,697,891, were in 1855, £3,724,644. In 1853, 993 miles of railway were opened, and in June of the present year, 2,086, and the remuneration for labor has advanced in every year since 1849.

Spain has progressed rapidly during the last few years. Her population in 1854 was reported at 12,168,774; in 1857 it was 16,301,851. Its revenue in 1852 was £11,379,274; in 1857, it was £18,126,314. The total tonnage in 1850 was 244,854; in 1857, 349,762. Its imports and exports together were in 1851, £11,857,559; in 1857, £23,677,851. In 1855 the number of miles of railway opened was 130, in 1858, 456.

Switzerland has also progressed considerably within the last few years, though the statistics of that country are incomplete. Between 1853 and 1856 the increase in her chief imports was 12 per cent., and in 1857 still greater. The value of the exports of seven principal articles rose in those years from f. 246,019,148 to f. 373,246,817. The watch trade of Switzerland, however, suffered largely in 1857 from the revulsion.

Nearly every European state has given similar evidence of commercial progress during the last six or seven years, and of increase in population. —*Upper Canada Journal of Education.*

—Turning over the pages of the Cyclopaedia of Commerce, just published, a few matters attracted our attention as curiosities, which we propose to transcribe for our readers. We were looking for the small things in commerce—matters, that, in taking a magnificent, broad, and comprehensive view, would be overlooked—just as the invention of the greatest importance for domestic purposes would be overlooked and unnoticed in its homely attire when placed in exhibition and surrounded by works of polished art, costly machinery and gorgeous furniture. An humble inventor once placed in such an exhibition a few bunches of friction matches. They were unnoticed. Visitors went there looking for some great thing, not realizing that the despised package of splints, tipped with chemical fire, was the thing in that proud collection, destined to work a revolution in the means of procuring artificial light, and to become a universal necessity, to be deprived of which would be one of the greatest inconveniences that could happen.

It is not more than twenty years ago since the tinder-box was in universal use. It is abolished now. The invention of the friction match spread slowly; but who at this day would venture to say they could do without it? Insignificant as they appear to be, single factories, with expensive machinery, cut up large rafts of timber annually for matches.

Under the head of pins, we find that the manufacture of this indispensable little instrument was commenced in the United States, between 1812 and 1825, since which time the business has extended greatly, and several patents for the manufacture of pins have been taken out. The manufacture in England and other parts of Europe is conducted upon improvements made in the United States. Notwithstanding the extent of our own productions, the United States imported in 1856 pins to the value of \$40,255.

Still keeping our attention directed to small things, we find that the imports of needles into the U. S for 1856, amounted to \$346,000. It is said that needles were first made in England in the time of Queen Mary, by a negro from Spain; but he would not impart his secret; it was lost at his death, and not recovered again till 1568, in the reign of Queen Elizabeth, when a German taught the art to the English, who have since brought it to the greatest perfection. It is stated that the construction of a needle requires about 120 operations, but they are rapidly and uninterruptedly successive.—*Ibid.*

#### SCIENTIFIC INTELLIGENCE.

—The extraordinary brilliancy of the Aurora Borealis, as it appeared at different hours on Sunday night, the 28th of August, was such as has not been witnessed for years. About half past eight the beauty of its first appearance reached its height. A brilliant light first shone out from the North-west, then broad rays of equal splendor shot upwards from all parts of the horizon, arching over and meeting in a point directly overhead, forming as it were the frame work of a vast dome covering the surface of the earth. There then appeared, resting on this magnificent arch rose-coloured clouds gorgeously yet delicately tinted, such as are sometimes seen at sunset, and in places so dense as to shut out the stars behind them. The play of the light upon the rays of the Aurora, and especially at the crown of the arch, were extremely beautiful. Towards nine o'clock this gradually faded away, but more or less of the Aurora shone all through the night.—At midnight, again, it was particularly beautiful, the light being almost as bright as that of the moon when at its full, but the heavens were much more splendid from the effects of this curious phenomenon. A broad band of exquisite crimson shot out from the western horizon, reaching to the zenith, while the coruscations from every point of the firmament were magnificent in the extreme. The whole aspect was one of the utmost splendor, and one would hardly ever tire in gazing on the enchanting scene.

From all parts of North America we have glowing descriptions of the gorgeous appearance of the Aurora Borealis on the night of Sunday last. On Thursday night, the 1st Sept, towards 12 o'clock, the Aurora again appeared with extraordinary brilliancy and richness of coloring, giving a light almost equal to that of day.

The effect of the Aurora on the telegraph lines is thus stated by the Superintendent of the Montreal Telegraph Company, under date of the 29th of August he telegraphs as follows:—"I never in my experience of

15 years in the working of telegraph lines, witnessed any thing like the extraordinary effect of the Aurora Borealis between Quebec and *Pointe aux Pères* last night. The line was in most perfect order, and well skilled operators worked incessantly from 8 o'clock last evening till one o'clock this morning, to get over in even a tolerably intelligible form about 400 words of the steamer Indian's report for the associated press, and at the latter hour, so completely were the wires under the influence of the aurora, that it was found utterly impossible to communicate between the telegraph stations, and the line was closed for the night."

A telegraph from Boston, under date of September 2nd is as follows:—"There was another aurora last night, so that at about one o'clock ordinary print could be read by the light. The effect continued through this morning, considerably affecting and impeding the working of the telegraph lines. The aurora's currents from east to west were so regular that the operators on the eastern lines were able to hold communication and transmit messages over the line between this city and Portland, the usual batteries being disconnected from the wire. The effects were exhibited upon the Cape Cod and other lines."

The operators further say: "We have again experienced, this morning, a remarkable manifestation of magnetical influence on the wires running in all directions from this office, arising, doubtless, from a magnetic storm, which, were it night, would present a magnificent display of the Aurora. We observed the influence upon the lines at the time of commencing business—eight o'clock—and it continued so strong up to half-past nine as to prevent any business being done, except by throwing off the batteries at each end of the line, and working by the aurora current entirely! Several dispatches were in this way received from Portland, Maine, as well as on the line between South Braintree and Fall River, where they cut the batteries off, and worked for some time with the current from the magnetic storm. The waves were longer than I have ever seen them before, lasting sometimes over a minute; but the same peculiarities of changing the poles was observed. At about ten o'clock, a.m., the storm partially subsided, so as to enable the lines to resume the use of their batteries."

The *Boston Atlas*, alluding to the circumstance, adds, that "The wire was worked for about two hours without the usual batteries, on the auroral current, working better, as the operators state, than with the batteries connected. The current varied, increasing and decreasing alternately, but, by graduating the current adjuster, a sufficiently steady effect was produced to work the line with but little interruption."

Precisely the same thing was done on the Pittsburg Telegraph line. The *Pittsburg Chronicle*, after alluding to the appearance of the Aurora on Thursday night and Friday morning, says: "After getting the attention of Philadelphia, the battery at Pittsburg was reversed, and although the one at Philadelphia remained unchanged, and a heavy extraneous current pervaded the whole line, Philadelphia and Pittsburg were in full communication with each other, and by a way which, in the normal condition of the wires, and were there no foreign and unusual influences at work, would, of course, have been absolutely impossible. This telegraphic communication was practicable but for a few moments at a time, for this extraneous auroral current, being very capricious, and changing at frequent intervals, rendered the alteration in the poles of the battery necessary, to keep up the communication."

"Finally, in order to test the important fact just discovered still further and more conclusively, Pittsburg and Philadelphia cut off altogether the galvanic batteries, which are invariably and necessarily employed in the transmission of dispatches, and worked their instruments exclusively by means of the auroral electricity, which, while it continued, was exactly similar in its effects, though differing in kind, to that generated in telegraphic batteries—or what is known as the common atmospheric electricity. The flow of auroral electricity was steady and regular."

"A couple of messages were transmitted while the wires were under this extraordinary influence, and at intervals a lively chat was kept up by the same medium between the two operators at Philadelphia and Pittsburg, expressive of the novelty of this new method of overcoming, in a great measure, the embarrassing effects of the Aurora Borealis on telegraph wires."

"This, it is believed, is the first and only instance on record where the aurora itself—beautiful, glorious, and mysterious as it has always been considered in its brilliant manifestation,—has actually been employed to do the errands of man."

The extraordinary force of the agency has been commented on in communications from telegraph operators at various points. Mr. Toby, for example, the operator at Worcester, Mass, says:—

"The effect of the phenomena was most perceptible upon the telegraph lines. The wires seemed charged to their utmost capacity with the electric fluid, and seemed ready to flash forth with a fury that marks a vivid stroke of lightning. During ten years, experience in telegraphing I have frequently observed the effect of the Aurora Borealis on the wires, but never before have I seen it so grand and appalling."

One very remarkable circumstance connected with the auroral phenomena of last week, is their being seen simultaneously under almost precisely the same aspects, through so extensive a region of atmosphere, the phenomena visible at Quebec on the night of Sunday week being visible at the same hour at points so far south as New Orleans and Mobile. The display of aurora was also remarkable in England, as we learn by the



late arrivals. At New Orleans the aurora created quite a sensation, the like having never been seen there before, within the memory of "the oldest inhabitant." The Editor of the *Mobile Tribune* says he has seen it once before in that city but not near so bright as on Sunday night.

Every one must have observed that the aurora on this occasion has been the harbinger of a spell of cold weather, most unusually cold for this season of the year.

What the aurora borealis really is, and what produces or causes it, are questions which science hitherto has not been able to answer very decisively. According to some, the aurora is simply the light of the sun reflected in the higher regions of the air. According to others, it is caused by magnetic influences. Euler believed it to be a nebular substance, similar to that which forms the tails of comets. Another scientific writer maintained that it was a phenomenon resulting from a mixture of the atmosphere of the sun with that of the earth. Some have been of opinion that the auroral phenomena took place entirely beyond the region of our atmosphere—others, that they were confined to the atmosphere. With the progress of accurate observation, the opinion has now come to be very generally entertained that the aurora, like lightning, is caused by atmospheric electricity, the difference being that lightning has for its field of operations the denser atmosphere near the earth, while the aurora consists of electrical discharges through the highly rarified upper parts of the atmosphere. The fact, however, that on last Thursday night, the aurora was used on several lines to send telegraphic messages, entirely superseding the usual batteries, while it establishes the identity of the aurora with electricity, or at least its possession of like qualities, at the same time destroys the theory that its manifestations are confined to the upper regions of the atmosphere.—*Upper Canada Journal of Education.*

—The Hon. J. Ferrier and his son, who have been recently traveling in the East have presented the Natural History Society of Montreal with a large collection of Egyptian curiosities. A meeting of the society, at which His Lordship the Anglican Bishop of Montreal presided, was held expressly for the reception and exposition of these antiquities, among which are several mummies and specimens of papyrus, wheat, dates, necklaces, embalmed crocodiles, images of gods, and other curious objects, found in the pyramids and other Egyptian tombs. Lectures were given by Mr. Robert Ferrier and Professor Cornish, on ancient Egypt, after which Dr. Fenwick, assisted by other gentlemen, proceeded to unfold to view one of the mummies embalmed probably thousands of years since. The *Montreal Gazette* says:

"From the great number of the wrappings in which the shrunken form was enveloped, it was a work of no little time to bring it to light, and when exposed it had much the appearance of a skeleton covered over with a very dark brown skin, with numerous pieces of what were supposed to be the spices used in embalming adhering to it, and emitting an odor heavy and disagreeable. It was an object suggestive of many thoughts, reaching back to the time when that shriveled up form and remnant of humanity was endowed with life and vitality, and was susceptible of the same feelings—feelings of fear, or love, or hate—as those who now gazed upon it with so much curiosity; thoughts reaching back to the time when Egypt was in its palmiest days, when its massy pyramids, its temples and its obelisks were reared by the proud sovereigns who ruled over it, and which now remain but as landmarks to tell of the greatness and grandeur of a people whose power and glory have passed away no more to return to them."

—What was called the *Arctic Mystery* has at last been explained. The expedition, conducted by Captain McClintock, of the *Fox*, has been the means of ascertaining the fate of Sir John Franklin and his men. The English papers are full of the details of the narrative, sent to the admiralty, by the intrepid and successful Capt. McClintock, and contain long lists of the relics found at several places by the different parties of men sent from the crew of the *Fox*. It was on the 6th of May last that lieutenant Hobson, who was leading one of those parties, round Cape Victory, on the north-western shore of King William's island, found in the ruins of a cairn, a document contained in a tin box, dated 25th April, 1848, and signed by Captain Crozier and Fitzjames, which contains the first authentic intelligence of the death of Sir John Franklin. The *Erabus* and the *Terror* had remained during the winter at Beechey's island after having gone up the Wellington channel to the 71st degree north. Sir John Franklin died the 11th June 1847. On the 22nd of April, 1848, the two vessels were left at a distance of 15 miles N. N. O. of Cape Victory, and the survivors, numbering 105 men, reached the last mentioned place under the command of Capt. Crozier. Up to that date the expedition had lost 23 men, among whom 9 officers. Clothes, tools, blankets, and a great many other relics were found lying about the cairn. Lieutenant Hobson found afterwards, in 69° 09' Lat. N. and 99° 37' Long. W., a long boat fixed on a sleigh, made for the purpose and which contained, clothes, arms, ammunitions, provisions, besides two human skeletons and two double barrel guns. Capt. McClintock learnt from the Esquimaux, that the men commanded by Capt. Crozier had all died on their way to *East-River*. Lady Franklin who has devoted so many years of her life to the noble purpose of finding traces of her lost husband, impairing her health by anxiety, and sacrificing her fortune, has now learnt these sorrowful tidings, dispelling the hopes she might have entertained.

—Sir Isambert Kingdom Brunel, engineer of the *Leviathan*, and son of the celebrated French engineer, who made the tunnel under the Thames, died at London, at the age of 53. Besides his share in the *Great Eastern* vessel, Sir Isambert Brunel obtained part of his fame by another undertaking with almost the same name, the *Great Western Railway*. Although born in London, he was chiefly educated in France, the native country of his distinguished father. His death has almost coincided with the late accident to the *Great Eastern*, the final success or failure of which he has not been left to witness.

—Every year discoverers add planets to our system and reveal in the vast regions of space myriads of worlds scattered as dust in the firmament.

Leverrier, whose name will be placed with those of Newton and Kepler, and whose studies and observations have shed so much light on science has discovered a new planet between the Sun and Mercury. The perturbations which Leverrier had observed in the motion of Mercury and which could be accounted for, neither by the incorrectness of the instruments of observations nor by the influence of the other celestial bodies led him to suspect the existence of some other planet. Following up the laws of gravitation, he was led to place the disturbing force between the centre of our system (the Sun) and Mercury.

The existence of many other planets belonging to our solar system is suspected. Many planetoids have been discovered of late years but the discovery of a planet is not an every day event, it is one that confers more than a transient fame on the discoverer.

—Our readers feel undoubtedly some interest with regard to the fate of the *Great Eastern*, the second wonder of the age. Is she to cross the Atlantic this fall, asks the pleasure seeker? Some say yes, others no: even it has been reported that her doom is sealed, and that her funnels are never more to send forth smoke. We hope however that this continent will be gladdened with her visit, and if we despair of seeing her in America this fall, we think, if newspapers are anyways reliable, that sight seekers, and the curious of the States and of Canada will behold the *Leviathan* quietly reposing after its ocean voyage alongside the wharves of Portland next spring.

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