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RECENT SPEECHES ON SCIENCE AND EDUCATION.

1. HON. SIR JOHN T. COLERIDGE (JUDGE Q.B.)

(1) POLITICAL AND SOCIAL AMELIORATION PRODUCED BY EDUCATION.

At the distribution of certificates to the successful candidates at the late Oxford Local Middle-Class Examination, held at Exeter, the Hon. Sir John T. Coleridge, after the distribution of the certificates, addressed the meeting. He said: passing by for a moment what of course I do not undervalue—the higher motives upon which we ought to value national education—there is one point of view in which it strikes me it has not been so often presented to the minds of assemblies like the present, but which I think is of the greatest importance. No one who has considered the history, not merely of this country but of Christendom in general, for centuries back, can fail to perceive that there has been for centuries a gradual advancement towards the approximation of the different classes of society, and to increasing power with regard to the government of what are called the labouring classes. (Hear, hear.) This approximation seems to me to be so orderly, to have proceeded so regularly, to have gone on so widely—I may say so universally—through Christendom, that I cannot but think that we may trace in it the finger of Him who governs the world; and that it must be for good. (Hear, hear.) It must be for good if we rightly use and direct the dispensations of the Almighty, as far as we are concerned. The destinies of nations are in His hands, but, as you well know, He acts ordinarily by secondary means; He acts by human agents, and it is in our power to make that a blessing, as He intended it, or a curse, which He did not intend, according as we use that which He puts in our hands. The river will flow on. If you attempt to stop it, it will overwhelm you in ruin. If you neglect its course, you may lose the benefits it would otherwise confer. But if you direct its course wisely it will be a source of fertility to the land through which it flows. (Applause.) Something like that is what this country ought to do, and what I think it is now doing in respect of education. If the poorer classes are to be raised in political power in this country, to make that a blessing you must cultivate them intellectually and morally for discharging the duties to be thrown upon them. (Hear, hear.) Therefore it is that I think the University of Oxford conferred the largest benefit that it had in its power to confer upon this country at large when passing simply from the education of the higher classes, and those who were destined for the Church, it spread out its hands in a frank and liberal spirit to all classes of society, and offered to connect everybody with itself, in a certain measure, who would only fit himself for it by proper application. (Applause.) It is obvious, and everybody must see, that the more the classes of society lower than those who may be able to take the benefit directly of university education avail themselves of this privilege, the more will they fit themselves for all those acts of power and administration of government to which in the course of things they may probably be called. (Hear, hear.)

(2) SCHOOLMASTER'S PROFESSION—IMPORTANCE OF THOROUGHLY TEACHING THE ELEMENTS—EXAMPLES.

I now pass on to the schoolmasters of the County who have taken part, or who shall take part, in preparing pupils for these examinations. They must feel that their position is considerably raised by it. When I say raised, don't let me be supposed for one moment to imply that it is a profession that is required in the estimation of society to be raised. My grandfather was a schoolmaster. I was a pupil of an uncle whom I loved and honoured as my father. I was a pupil at Eton of a cousin whom I loved as an elder brother. One of my brothers, as many of you know, has been for years labouring in the school at Eton — successfully I may say, certainly diligently—for a great number of years as assistant-master. I come of a family of schoolmasters; and let me assure those who are here of that profession, that I hold that part of my descent with as much pride, and greater pride, than I do my being able to trace it upon the other side to a gentleman who happened to be Lord

Mayor of London for several successive years in the reign of King Henry III. ("Hear, hear," and applause.) I look upon my schoolmaster's descent as the more noble of the two; and I am perfectly certain that not only the schoolmasters now assembled, but all the intelligent persons who are here, will go along with me in that feeling. (Hear, hear.) Schoolmasters will feel not merely that their labours are now brought more into the sunshine, and that they receive the reward which it is no shame for any man to be proud of receiving, when they produce their successful candidates; but the more intelligent among them will receive extremely useful hints by the course the examinations have taken, as to the best means of discharging their duty. (Hear, hear.) I will not go into details in which I might run myself aground, for despite all my lineage I am not so practically acquainted with the subject as many others now here. But there is one thing I would venture to point out. I would press upon them the importance of that which the University of Oxford adhered to, to the great disappointment of many persons,—namely, the sticking to the elements, and saying that nothing shall supersede accuracy in the lower and rudimental parts of education. (Hear, hear.) I do not know how that may be with some masters in this country, I can speak for myself. My good uncle—it is now nearly 60 years ago, for I began my Latin before I was six years of age—when we came to a new book, I remember especially Homer, said "Now, boys, this is a new language. You have been reading Xenophon and Lucian. You are now going to read Homer; he spoke in a different language, he thought in a different way from the authors you have read. Let us go by steps. Every word, little or great, every και and γε, every noun and verb, every single word in that book did he make us give an account of. For the first fortnight, three weeks, or a month, about five lines took an hour to get through; and very tedious it must have been to a man who possessed great delicacy of mind, and could enter into the whole beauty of the poet as a poet. Yet he submitted to that drudgery because he knew well how it would pay. The consequence was that at the end of a month we knew the book we had gone through—the 100 or 200 lines—so accurately that we might be said, as far as boys could do, to know the book. We knew it grammatically, and nothing came too hard for us after that. That I venture to suggest as an example that might be of use to all schoolmasters. ("Hear, hear," and applause.) I have said I do not know how this is in this country among the masters. I have not the smallest doubt how it must have been with those whose pupils have been successful. I will tell you a story which I have upon the best possible authority. It does not apply to any schoolmasters here, or within many hundred miles of this county. An examiner was about, and he had a class before him—the first class in arithmetic. They were able to answer questions; they had gone through all the higher branches of arithmetic, and were prepared to answer anything. But he said, "I will give you a sum in simple addition." He accordingly dictated a sum, and cautiously interspersed a good many ciphers. Suppose, for instance, he said "a thousand and forty-nine." He found there was not one in the class who was able to put down that sum in simple addition; they could not make count of the ciphers. That showed him the boys had been suffered to pass over far too quickly the elementary parts of arithmetic. (Hear, hear.) The examiner took them in grammar, and quoted a few lines from Cowper—

"I am monarch of all I survey,
My right there is none to dispute."

"What governs right?" There was not a boy could say, till it was put to them "none to dispute my right." Then

"The beasts that roam over the plain
My form with indifference see."

None could tell what governed "see," or what "see" governed after it. These are instances that I think it not useless to mention, for the purpose of drawing the attention of intelligent schoolmasters to the necessity of attending—not merely once in the beginning, but going back from time to time—to the elements. ("Hear, hear," and applause.)

(3) ENCOURAGEMENT TO POOR AND INDUSTRIOUS BOYS.

Let me impress upon you that the best motto you can take for yourselves in this respect is that which was taken by a most eminent man, who made his way from a hair-dresser's shop to be Lord Chief Justice Tenterden. What was his motto? When a man is made a judge he is made a sergeant, and as sergeant he gives rings to some of the great officers of State, with a motto upon it. His motto was "Labore." He did not refer to his own talents. It was not "invita Minerva." To his immortal honor be it said—from the hairdresser's shop in Canterbury to the Free School in Canterbury; from the Free School in Canterbury to Corpus Christi College; from Corpus Christi College to the bar; from the bar to the bench; from the bench to the peerage—he achieved all with unimpeachable honour, and always practising that which was his motto at last. One of the most gratifying scenes I ever witnessed was when that man went up to the House of Peers in his robes for the first time, attended by the whole bar of England. (Hear, hear.)

2. RT. REV. DR. JOHN JACKSON, LORD BISHOP OF LINCOLN.

(1) NECESSITY FOR SCHOOLS—OUR FACULTIES GIVEN US TO BE IMPROVED.

At a recent meeting held at Reepham, near Lincoln, to celebrate the opening of a new school, the Lord Bishop said he felt that a parish without such an institution was deficient in one of the most important agencies which God commanded them to employ for their own benefit and the benefit of their fellow creatures. As to this point, many might say that he attached more importance to it than the subject possessed. He did not think that, nor could he assent to that opinion. Almighty God had given them all limbs and strength, and mind with its various endowments, and He clearly gave these that they should improve them for His service, that the whole man, both mind and body, should be fitted to serve Him. Now, what would they think of a man who allowed any part of his bodily faculties to fall into disuse? Would they not say that he was doing that which God had not intended? They had heard of the faquers who thought they were serving their Maker by keeping their limbs without motion until they were not able to use them, and then spent the remainder of their lives in begging. It did not seem to him that such men were worthy of charity. Did not God give them all the faculties of their minds, and did He not require them to use them for His glory? In China it was considered a great part of beauty that a woman should have a small foot, and with that object, the feet in early life were cramped into a narrow compass until the instep grew so broad as to look like a crow's foot. He did not complain of the matter of taste, but when those poor women grew up they were unable to walk, and quite unfit to make themselves useful as wives and mothers. This was entirely wrong. Well, if the Creator had given men bodies and minds, with certain powers, strength, memory, judgment, and imagination, all to be useful, should they take no pains to improve them?

(2) ADVANTAGES OF EDUCATION TO THE LABORING CLASSES.

But, it is asked, what would be the use of education to those who had to get their living by manual labour?—a man is not likely to plough anything the better, nor is a young woman likely to make a more useful servant because they can write and know geography. It was difficult to argue with such people, and with the idea here intended he could not agree, and he could never be persuaded to believe that a tool was not improved by being sharp, or that they could cut the better with a blunt instrument. It was a wise man's saying that if the iron be blunt they must put out more strength, but wisdom was profitable to direct. Of course reading did not help a man to make a straight furrow, nor did geography assist him in his work. But he knew that habits of intelligence and quickness did make a person a better workman in every sort of work, and he knew further, that these habits were acquired by the young while they were at school. The truth was the mind was then brought out and made useful for all the purposes of after life, and he did not see how the system of ignorance was to be defended. Large sums of money were spent in training horses and dogs, every attention was devoted to the development of their powers, and yet,—one could hardly speak of it without indignation,—human beings were to be left without education, without that training which would fit them to take their stations in the world, and to enjoy rationally those pleasures which God had provided.

(3) ADVANTAGES OF EDUCATION EVEN IN OUR AMUSEMENTS.

And he would observe, in passing, that amusement, relaxation could not be thoroughly enjoyed without some degree of education. He knew that in this working-day world the greatest part of the time of all must be spent in labour; but all were to have some time of leisure, and God intended that there should be leisure and amusement. Now, it was worth considering that there were two modes of relaxation, the one physical, the other intellectual; and who would say that the latter was not to be preferred? He was sure no one would tell him that there was more pleasure in sotting in a public house than in reading a book. But even bodily amusement, games for instance, were more thoroughly enjoyed by men whose faculties had been quickened by education. They were, of course, more important reasons why they should rejoice at seeing schools established.

(4) FUTURE CHARACTER GENERALLY FORMED AT SCHOOL.

They knew that in schools a great part of the habits of life were formed, and the foundation of a virtuous life lay in being trained early to do what was right. Not merely what persons liked, but they should be taught religion, obedience, punctuality, and self-command—the elements, in fact, of the Christian character. Now all these could scarcely be learnt by most persons unless they were

learnt at school, for the greater number of parents, working men and women, were employed so much from home that they were obliged to leave their children to the care of others almost as much occupied as themselves, and therefore it was that a school was so unspeakably valuable in giving the means of forming those habits when the mind was young and tender, and readily susceptible of impressions. The school, he repeated, was greatly to be prized, because there the character was formed and principles inculcated which would give direction to the after career of the young. It was one great advantage of these schools that the children could there become acquainted with the words, the phrases, and the truths of God's Bible. A great deal of which was read in after life would be unintelligible to many if they had not been taught early to understand the proper meaning of words. A great deal of what was read in church and what was preached would give them very little information unless they had become accustomed to read the history and discourses of our Lord in the Bible, but when their education had been properly attended to these subjects came back to their minds when they were present at the services of the Church. Then, at school they would learn to avoid habits which were bad, and which, without instruction, they might think harmless ; they would, under careful guidance, learn to do that which was right—the truth would become wrought into their minds, and would become a part of themselves ; God's Word would become a principle with them—a principle of life and action. He did not mean to say that education however good, however carefully attended to, would necessarily make Christian men and women. They knew, unhappily, that it did not, and that the instruction given in early youth often seemed to produce very little fruit. Neither of the two men lately executed in Lincoln, for one of the most terrible crimes that had ever been perpetrated in the country, could be called uneducated, and one of them, as they might have seen by his letters in the newspapers, was a man of more than an average intellect, and acquainted with his Bible. And this should tell them, whatever might be their privileges, not to be be high-minded, but to fear, and never to let go the all important truth that it is nothing that man can do, but God's spirit alone, that can save and enable them to keep in holiness. But, notwithstanding this, he ventured to assert that taking the world in general there was more uprightness and probity among those who had not, and while they should not think that sending their children to school would necessarily produce a religious and virtuous character still they should thank God that He had given this opportunity for improving them, and for having them brought up in the way that they should go.

(5) IMPORTANCE OF REGULAR ATTENDANCE AT SCHOOL.

They must not expect that children would derive much advantage from the school unless they attended very regularly. He knew, as an old schoolmaster, that the boys who came irregularly did very little good ; what they learnt one day they forgot another ; they picked up bits and scraps and had nothing whole, and what was still worse, they contracted habits of irregularity. He would, then advise those who sent their children to school to enforce habits of punctuality. He knew the excuse was often made that there was something for the children to do at home ; but he would urge the parents to make a little sacrifice and allow the children to go regularly, otherwise they would throw away their money on the school. But there was a more important matter than this.

(6) DUTIES OF PARENTS IN REGARD TO THE SCHOOLS.

Whether the children did well at school depended on the example set them by their parents. All knew how imitative children were ; they had sharp eyes and ears, and were more likely to follow what they saw their parents do than what they heard at school, and therefore, fathers and mothers should remember that their children were looking up to them and forming their lives and habits on their conduct. There was another point which he should bring to the attention of parents. No human teaching could have any effect on the character unless God's blessing went with it. Now, he would ask them to make this new school the object of their prayers ; when they were praying for themselves, they should ask Him to bless the school—to bless the teachers—that the seeds sown there may bring forth a perpetual harvest of honesty, goodness, and holiness of life. A great deal of the efficacy of the school would, of course, depend on the teachers, but on this point he would not trouble them by saying more than that those teachers only were likely to have God's blessing, and to reach the hearts of those about them, who made their teaching a religious duty. They should not merely try to prepare the children for the duty of this life, but to train them for eternity, and with this view they should endeavour to conduct the school in a Christian spirit, and let the children see that the precepts which they inculcated were embodied in their lives. In this lay the reality and the power of Christian education. He earnestly prayed that the school might be the source of countless blessings to the present and to future generations. (Applause.)

3. Right Hon. Lord Brougham, F.R.S.

PROGRESS OF EDUCATION IN ENGLAND—MIDDLE CLASS SCHOOLS.

During his remarks on this subject in the House of Lords, the noble Peer stated, that he had the honor of presiding over the celebrated Education Committee which sat in 1816, 1817, and 1818, by whose labours the subject of national education was invested with an importance and an interest which it had ever since sustained in the public mind. On the recommendation of that committee he introduced a Bill into Parliament, but was prevented from proceeding with it on account of the objections of the Dissenting body, who had always been his most able coadjutors in the cause of education. A long time elapsed before an opportunity presented itself of again pressing the subject on the attention of Parliament ; but he might mention that before 1818 there were in England 19,400 day schools, and 5,400 Sunday schools, the former educating 674,000, and the latter 525,000 children ; and that before a single farthing was paid for the purpose by the State, there were being educated in day schools 1,500,000, and in Sunday schools 1,250,000 children. The noble and learned Lord then traced the progress of the grants for education under the auspices of the Committee of Privy Council, and expressed his gratification at the great improvement which had latterly taken place in the administration of the fund. Another plan had been proposed, however, which he hoped would not be lost sight of—*that of empowering town councils to levy an education rate in towns* under their control, and by means of that rate to educate the children of any religious denomination, *leaving the parents to decide upon the kind of religion which their children should be taught.* The petition which he had presented laid it down as a general proposition, that the middle classes had the same right to attention from the Government and Parliament as the working classes. The upper classes and their schools could take care of themselves. The schools of the working classes had, under the system established by the Committee of Council on Education, obtained the advantages of inspection, of the training of masters, and of pupil teachers. What the petitioners called upon their lordships and the Government to do, was to give to the middle classes the advantages which the upper classes enjoyed without any interference, and which the working classes had obtained under the system adopted by the Committee of Council. According to a calculation which he had made, founded upon the income-tax returns and those of the registrar-general, it was probable that there were in the country about 120 middle-class schools, and what was desired was that these establishments should be placed under the superintendence and care of the Committee of Council ; that was that any master of such a school might apply to that committee to have his school inspected, and if upon inspection its condition was found satisfactory, he should receive a certificate. Such certificates would have all the value of an academic degree, and would encourage those who had become schoolmasters to perform their duties efficiently, and induce other persons to undertake the task of tuition. Another point of great importance was the supply of good school-mistresses. At present the most serious consequences resulted from the inefficiency of female teachers ; and there could be no doubt, if they were improved, that young women would become better wives and mothers. The insufficiency of education was, unfortunately, greatest in those districts where it was most wanted. The defect in the large towns was greater than in the country districts, in the proportion of 13 to 11. In the metropolis it was greatest of all. Of course, anything like compulsion would be utterly out of the question, still less was it consistent with sound policy or with true religion to make any advantage dependent on any man's faith. Persecuted truth would always lift its head more loftily and succeed more certainly, but to persecute error was often to delay its downfall. The Bishop of Lincoln thought the plan of inspecting middle-class schools would be productive of much advantage. (Hear, hear.)

4. His Royal Highness Prince Albert.

(1) THE SCIENTIFIC PECULIARITIES OF THE PLACE OF MEETING.

At the recent meeting of the British Association of Aberdeen, under the Presidency of the Prince Consort, His Royal Highness proceeded to say :—The Association meets for the first time to-day in these regions and in this ancient and interesting city. The choice appears to me a good one. The travelling philosophers have had to come far, but in approaching the Highlands of Scotland they meet nature in its wild and primitive form, and nature is the object of their studies. The geologist will not find many novelties in yonder mountains, because he will stand there on the bare backbone of the globe, but the primary rocks, which stand out in their nakedness, exhibit the grandeur and beauty of their peculiar form, and in the splendid

quarries of this neighbourhood are seen to peculiar advantage the closeness and hardness of their mass, and the inexhaustible supply for the use of man, made available by the application of new mechanical powers. On this primitive soil the botanist and zoologist will be attracted only by a limited range of plants and animals, but they are the very species which the extension of agriculture and increase of population are gradually driving out of many parts of the country. On those blue hils the red deer, in vast herds, holds undisturbed dominion over the wide heathery forest, until the sportsman invades the moor. In return for the help which science has afforded him, the sportsman can supply the naturalist with many facts which he alone has opportunity of observing, and which may assist the solution of some interesting problems suggested by the life of the deer. Man, also, the highest object of our study, is found in vigorous, healthy development, presenting a happy mixture of the Celt, Goth, Saxon, and Dane, acquiring his strength on the hills and the sea. The Aberdeen whaler braves the icy regions of the Polar Sea, to seek and to battle with the great monster of the deep. He has materially assisted in opening these icebound regions to the researches of science; he fearlessly aided in the search after Sir John Franklin and his gallant companions, whom their country sent forth on this mission. The city of Aberdeen itself is rich in interest for the philosopher. Its two lately united Universities make it a seat of learning and science. The collection of antiquities, formed for the present occasion, enables him to dive into olden times, and, by contact with the remains of the handiwork of the ancient inhabitants of Scotland, to enter into the spirit of that peculiar and interesting people, which has always attracted the attention and touched the hearts of men accessible to the influence of heroic poetry. Gentlemen, this is the 29th anniversary of the foundation of this Association; and well may we look back with satisfaction to its operation and achievements throughout the time of its existence. On the 27th of September, 1831, the meeting of the Yorkshire Philosophical Society took place at York, in the theatre of the Yorkshire Museum, under the Presidency of the late Earl Fitzwilliam, then Viscount Milton; the Rev. W. Vernon Harcourt eloquently set forth the plan for the formation of a British Association for the promotion of science. Mr. Harcourt summed up the disiderata in graphic words, which have almost identically been retained as the exposition of the objects of the society, printed at the head of the annually-appearing volume of its transactions:—'To give a stronger impulse and more systematic direction to scientific inquiry—to promote the intercourse of those who cultivate science in different parts of the empire with one another, and with foreign philosophers—and to obtain a more general attention to the objects of science, and a removal of any disadvantages of a public kind which impede its progress.'

(2) THE NATURE OF SCIENCE, AS DEFINED BY THE PRINCE.

To define the nature of science, to give an exact and complete definition of what that science, to whose service the Association is devoted, is and means, has, as it naturally must, at all times occupied the metaphysician. He has answered the question in various ways, more or less satisfactorily to himself or others. To me, science in its most general and comprehensive acceptation, means the knowledge of what I know, the consciousness of human knowledge. Hence to know is the object of all science; and all special knowledge if brought to our consciousness in its separate distinctiveness from, and yet in its recognized relation to, the totality of our knowledge, is scientific knowledge. We require, then, for science—that is to say, for the acquisition of scientific knowledge—those two activities of our mind which are necessary for the acquisition of any knowledge—analysis and synthesis; the first, to dissect and reduce into its component parts the object to be investigated, and to render an accurate account to ourselves of the nature and qualities of those parts by observation; the second, to recompose the observed and understood parts into a unity in our consciousness, exactly answering to the object of our investigation. The labours of the man of science are therefore at once the most humble and the loftiest which man can undertake. He only does what every little child does from its first awakening into life, and must do every moment of its existence; and yet he aims at the gradual approximation to Divine truth itself. If, then, there exists no difference between the work of the man of science and that of the merest child, what constitutes the distinction? Merely the conscious self-determination. The child observes what accident brings before it, and unconsciously forms its notion of it; the so-called practical man observes what his special work forces upon him, and he forms his notions upon it with reference to this particular work. The man of science observes what he intends to observe, and knows why he intends it. The value which the peculiar object has in his eyes is not determined by accident, nor by an external cause, such as the mere connexion with work to be performed, but by the place which he knows this object to hold in the general universe of knowledge by the relation which it bears to other parts of that general knowledge. To arrange and classify that universe of knowledge becomes, therefore, the first, and perhaps the most important object and duty of science. It is only when brought into a system, by separating the incongruous, and combining those elements in which we have been enabled to discover the internal connexion which the Almighty has implanted in them, that we can hope to grapple with the boundlessness of His creation, and with the laws which govern both mind and matter. The operation of science, then, has been systematically to divide human knowledge, and raise as it were the separate groups of subjects for scientific consideration into different and distinct sciences.

(3) PROGRESSIVE TENDENCY TO CREATE NEW SCIENCES.

The tendency to create new sciences is peculiarly apparent in our present age, and is perhaps inseparable from so rapid a progress as we have seen in our days, for the acquaintance with and mastering of distinct branches of knowledge enable the eye, from the newly gained points of sight, to see the new ramifications into which they divide themselves in strict consecutiveness and with logical necessity. But in thus gaining new centres of light from which to direct our researches, and new and powerful means of adding to its ever-increasing treasures, science approaches no nearer to the limits of its range, although travelling further and further from its original point of departure. For God's world is infinite; and the boundlessness of the universe, whose confines appear ever to retreat before our finite minds, strikes us no less with awe when, prying into the starry crowd of heaven, we find new worlds revealed to us by every increase in the power of the telescope, than when the micriscope discloses to us in a drop of water, or an atom of dust, new worlds of life and animation, or the remains of such as have passed away. While the tendency to push systematic investigation in every direction enables the individual mind of man to bring all the power of which he is capable to bear on the specialities of his study, and enables a greater number of labourers to take part in the universal work, it may be feared that that consciousness of its unity which must pervade the whole of science if it is not to lose its last and highest point of sight may suffer. It has occasionally been given to rare intellects and the highest genius to follow the various sciences in their divergent roads, and yet to preserve that point of sight from which alone their totality can be contemplated and directed. Yet how rare is the appearance of such gifted intellects! and if they be found at intervals, they remain still single individuals, with all the imperfections of human nature. The only mode of supplying with any certainty this want is to be sought in the combination of men of science representing all the specialities, and working together for the common object of preserving that unity and presiding over that general direction. This has been to some extent done in many countries by the establishment of academies, embracing the whole range of the sciences, whether physical or metaphysical, historical or political, and in this country by this Association, which embraces in its sphere of action, if not the whole range of the sciences, yet a very large and important section of them, those known as the inductive sciences.

(4) LABOURS OF THE BRITISH ASSOCIATION.

It is with facts only that the Association deals. We proceed here by the inductive process, taking nothing on trust, nothing for granted, but reasoning upwards from the meanest fact established, and making every step sure before going one beyond it, like the engineer in his approaches to a fortress. We thus gain, ultimately, a roadway, a ladder by which even a child may, almost without knowing it, ascend to the summit of truth and obtain that immensely wide and extensive view which is spread below the feet of the astonished beholder. This road has been shown us by the great Bacon; and who can contemplate the prospects which it opens without almost falling into a trance similar to that in which he allowed his imagination to wander over future ages of discovery? From among the political sciences it has been attempted in modern times to detach one which admits of being severed from individual political opinions, and of being reduced to abstract laws derived from well-authenticated facts. I mean political economy, based on general statistics. If, then, the main object of science—and I beg to be understood, henceforth, as speaking only of that section which the Association has under its special care—viz., inductive science—if, I say, the object of science is the discovery of the laws which govern natural phenomena, the primary condition for its success is accurate observation and collection of facts in such comprehensiveness and completeness, as to furnish the philosopher with the necessary material from which to draw safe conclusions. Science is not of yesterday. We stand on the shoulders of past ages, and the amount of observations made, and facts ascertained, has been transmitted to us and carefully preserved in the various storehouses of science; other crops have been reaped, but still lie scattered on the field; many a rich harvest is ripe for cutting, but waits for the reaper. Economy of labour is the essence of good husbandry, and no less so in the field of science. Our Association has felt the importance of this truth, and may well

claim, as one of its principal merits, the constant endeavour to secure that economy. One of the latest undertakings of the Association has been, in conjunction with the Royal Society, to attempt the compilation of a classified catalogue of scientific memoirs, which, by combining under one head the titles of all memoirs written on a certain subject, will, when completed, enable the student who wishes to gain information on that subject to do so with the greatest ease. It gives him, as it were, the plan of the house, and the key to the different apartments in which the treasures relating to his subject are stored, saving him at once a painful and laborious search, and affording him at the same time an assurance that what is here offered contains the whole of the treasures yet acquired. The Association has thus far obtained the establishment, by the British Government, of magnetic and meteorological observatories in six different parts of the globe, as the beginning of a network of stations, which we must hope will be so far extended as to compass by their geographical distribution the whole of the phenomena which throw light on this important point in our tellurian and even cosmical existence. It was our Association which, in conjunction with the Royal Society, suggested the Antartic Expedition with a view to further the discovery of the laws of terrestrial magnetism, and thus led to the discovery of the southern polar continent. It urged on the Admiralty the prosecution of the tidal observations which that department has since fully carried out. It recommended the establishment in the British Museum, of the conchological collection exhibiting present and extinct species, which has now become an object of the greatest interest. But is it to be wondered at that even our public men require an effort to wean themselves from other subjects in order to give their attention to science and men of science, when it is remembered that science, with the exception of mathematics, was until of late almost systematically excluded from our school and university education; that the traditions of early life are those which make and leave the strongest impression on the human mind, and that the subjects with which we became acquainted, and to which our energies are devoted in youth, are those for which we retain the liveliest interest in after years, and that for these reasons the effort required must be both a mental and a moral one? We may be justified in hoping, however, that by the gradual diffusion of science, and its increasing recognition as a principal part of our national education, the public in general, no less than the Legislature and the State, will more and more recognize the claims of science to their attention; so that the State will recognize in science one of the elements of strength and prosperity, to foster which the clearest dictates of self-interest demand. If the activity of this Association ever found its personification in one individual—its incarnation, as it were—this had been found in that distinguished and reverend philosopher Alexander von Humboldt, who has been removed from among us in his 90th year within these last few months. One part of the functions of the Association can receive no personal representation, no incarnation,—I mean the very fact of meetings like that which we are at present inaugurating. These meetings draw forth the philosopher from the hidden recesses of his study, call in the wanderer over the field of science to meet his brethren, to lay before them the result of his labours, to set forth the deductions at which he has arrived, to ask for their examination, to maintain in the combat of debate the truth of his positions and the accuracy of his observations. These meetings, unlike those of any other society, throw open the arena to the cultivators of all sciences to their mutual advantage. The geologist learns from the chymist that there are problems for which he had no clue, but which that science can solve for him; the geographer receives light from the naturalist, the astronomer from the physicist and engineer, and so on; and all find a field upon which to meet the public at large, invite them to listen to their reports, and even to take part in their discussions, show to them that philosophers are not vain theorists, but essentially men of practice—not conceited pendants, wrapped up in their own mysterious importance, but humble inquirers after truth, proud only of what they may have achieved or won for the general use of man. Neither are they daring or presumptuous unbelievers—a character which ignorance has sometimes affixed to them—who would, like the Titans, storm heaven by placing mountain upon mountain, till hurled down from the height attained by the terrible thunders of outraged Jove; but rather the pious pilgrims to the Holy Land, who toil on in search of the sacred shrine, in search of truth—God's truth—God's laws as manifested in His works, in His creation. (Loud applause.)

5. Rev. Dr. Ryerson.

PROGRESS OF EDUCATION IN UPPER CANADA—ELEVATING POWER OF AN INTELLECTUAL PRESS, LIKE THAT OF ENGLAND.

At the recent dinner of the Agricultural Association at Kingston the Rev. Dr. Ryerson, in replying to the toast of our Educational Institutions, including his name, spoke substantially as follows:

Mr. President and Gentlemen: At this late hour, I am sure I shall best consult your feelings and best appreciate the cordiality with which this toast has been received, by confining myself to six minutes in remarking upon a subject which might well occupy six hours. It is something for a country to have educational institutions; it is still more for a country to have educational institutions which it values. It is something more still for a country to have educational institutions which impartially respond to the wants of all classes of the community, by whom it is supported with annually increasing energy and liberality. It is yet something more for a country to have educational institutions which are sustained, not by the will of a despot, or a central government as in Europe, or by the taxation of a central legislature as in neighbouring States, but by the voluntary action of the local municipalities of counties, townships, cities, towns, and villages; for it is the peculiarity of our Canadian system, that it depends for its support and extension upon these municipalities; and it is in the power of each of them to continue or discontinue the operations of the school system within its limits at its own pleasure. So that the complete efficiency and success of our educational institutions involves the elevation of the independent thinkings, and views, and efforts of the people in each municipality to the grandeur of a nation's noblest mission. And it is not a little gratifying and encouraging, that while every other branch of business and enterprise has suffered a declension this last year or two, as stated in the speeches of the gentlemen who have preceded me, as also by the press generally, there has been no decline in our educational progress; and the severe test to which our system of public instruction has been subjected by the agricultural, commercial and financial depressions of the last year or two has only seemed to develope more and more its strength and resources. It is true, that in the aggregate receipts of moneys raised for school purposes in Upper Canada, there is a less sum raised by Trustees for the purchase of school sites and the erection and furnishing of schoolhouses; but there is an increase during last year of 135 in the number of schools kept open—being in all 3,866; there is an increase of 21,046 in the number of pupils in the schools—the whole number being 293,683; there is an increase of $22,687 in the amount of municipal school assessments; and there is an increase of $60,402 in the amounts paid to teachers—the whole amount of teachers' salaries the last year being $920,633; and the whole amount provided and expended for school purposes in Upper Canada being $1,244,490.

Exception has been taken to our boasting of our institutions and doings. I think it is but an act of justice and an impulse of patriotism to recognize and avow the noble doings of a people, and to appreciate institutions which are an honor and blessing to our country. At the same time we must be sensible that our country and its institutions are only in their infancy, and our aim as a people should be upward and onward. And we may learn much also from the example and progress of other countries. While listening to Dr. Barker's very just tribute to the merits and claims of the Canadian Press, I could not but think that this essential agency of freedom and civilization would be greatly increased in power and usefulness, were there a class of men free from the distractions of other business, and from all extraneous dissipations and influences, to spread before the public, through the press, the concentrated results of their reasearches and thinkings on all questions of social and general interest. No one can read the columns of the London *Times*, *Atlas*, *Saturday Review* and some other English journals, without feeling that there is in their articles a concentration of intellectual power and research which no man can command and put forth amid the distractions and toils of daily business. Were there a class of men, free from all cares that would distract their attention, and from all connexions that would influence their judgments, to investigate and give the concentrated results of their own inquiries and reflexions on all questions affecting the well-being and progress of our country, how much would be done for the advancement of society, and how greatly would the thoughts and views of the people be uplifted and enlarged above those little dirty personal politics which corrupt the public mind and weaken the foundations of society.

(Dr. Ryerson resumed his seat amidst loud cheers, with which several of his remarks were responded to as he delivered them.)

6. Rev. A. Constable Geikie, M.A. (of Galt.)

NECESSITY FOR MEDICAL MEN BEING FULLY EDUCATED.

The Rev. Mr. Geikie delivered the inaugural address of the medical faculty of Victoria College, at the hall in Yorkville on the 3rd inst. After a few preliminary remarks he stated that the principal topic on which he intended to enlarge was the necessity for medical men being scholarly and lettered, and he would, at the commencement, remark that Provincial life was a life characterised by physical and commercial activity. The men who chiefly flocked to colonies were not the leisured, the wealthy, or the highly educated. They were the busy, the poor, and the unpretending. Crowded, jostled, and uneasy in the mother country, they sought in one of her colonies

for room, comfort, and riches. They came to this country to struggle upwards, and the effort was intense in proportion to the prospects of success which usually attended it. Thus, they would perceive that the great thought of a new country was business. If this was so with the older members of the community, it came to be so with the young. Even the talk of the drawing room smacked of trade. It was the language of the masses, and even if there was a portion who did not use it, still they were too few in number to make others feel that there was any necessity for laying it aside. In older countries there was a class exempted from toil by their wealth, and the leisure they had for acquiring knowledge began with their life, and was never interrupted; and as might be looked for, they were the educated class, being tutored in infancy in schools and colleges where many generations had cultivated letters. By this means was preserved a proper standard of what man intellectually should be. Under such circumstances, students felt that intellectual distinction was hard to win in a new country, and that it required no common effort to lift them into notice, and that to be known they must know. (Applause.) The Rev. gentleman then went on to say that, compared with Great Britain in literary culture the standard in Canada was low. It was not a reading country, unless they included newspapers, and it could not be called a literary country in the European or New England sense of the word, and he considered that ere a country could merit this title, its educational standard must have a length, breadth, and depth only attainable where there was a class early and continuously trained, and habitually exempt from manual and commercial cares. (Applause.) In Canada the want of literary taste and culture among the older members of the community, he said, had an evil influence on the young. They living amid such sterility were apt to become themselves sterile. They went from schools to colleges and to universities, and although they had all the advantages which they possessed and were instructed on the most proper subjects, still the same decaying wilderness remained at home. In such a case as the student knew he could enter into society without devoting too much time to any subject, it had the tendency to make him care little for thoroughness. He who so studied, he (Mr. Geikie) would tell them, was no proper student. He might by fagging come to know something of law or medicine; but, however much he might know of one science, this knowledge alone could not allow him to lay claim to the title of an educated man. (Applause.) A "Doctor" was not a surgeon or an accoucheur only, he ought also to be fitted to teach the science of medicine. And to do this in a proper manner, he ought to be a Latin, a Greek, a French, and a German scholar, so that the many treasures which had been written in these languages should not remain a hieroglyph, and even a quotation or a word be incomprehensible to him. As all sciences were correlative, no student could be truly master of one who did not know something, at least, of the others. He ought not to neglect English literature. It was all before him, and was a window for his use—its brilliancies for his pleasure. The world contained no grander literature, and no higher earthly privilege could be conferred on a British subject than to be led by genial guidance through the priceless treasures his own tongue contained. (Applause.) The lecturer said he sincerely trusted that those in Canada would not fall behind, and although they had their peculiar difficulties, still it was only by such studies that a professional man was mentally developed and perfected. The students had advantages which, if duly improved, would fit them for the discharge of their onerous and honourable duties. And his advice to them was to be determined that they would be cultivated men as well as skilful physicians. (Applause.)

7. JOSEPH WORKMAN. ESQ., M.D.

THE CHARACTERISTICS OF A TRUE STUDENT—PROFESSIONAL DUTIES.

Dr. Workman delivered the inaugural address of the Toronto School of medicine at the hall on Richmond St. on the 5th inst. After a few preliminary remarks he stated that in the efficient progress of all educational studies much depends on the capabilities, zeal, and industry of the teachers; but their efforts can effect but little, unless responded to by the manifestations of similar virtues on the part of their pupils. The great seats of learning in the old world have attained to their distinction through the celebrity of their pupils, and with justice point to these as the best proofs of their own public merit. Any school may send forth great men provided it is furnished with the requsite material from which to forge them; but no matter how clever the teacher, he cannot furnish the pupil with brains. But does not Canada furnish good material? He believed no country furnished better stock than the growth of Canada. The men who have laid the foundation of the Canadian nation (for such we are destined to become) were great men—they were clear-headed and strong-handed men; and such will be their sons. Work or starve is the iron rule of this western world. It is the original law of humanity; it is man's greatest—nay his only real blessing. Students of medicine in the present day have heavy work to go through with. The field of labor is ever widening and extending. But too much of our teaching is of a negative character and few men will devote more than three years to the acquiring of professional knowledge. Be careful to make the best of that time. In order to do so begin at the right end. Do not waste your time in the first year, consoling yourselves that you will make it up in the second. Idleness in the study of medicine is a deep criminality. You are preparing yourselves for the most responsible duties that can devolve upon man—to take in charge the health and lives of thousands of your fellow-beings—who are to receive at your hands blessings, or to suffer destruction. Students often undervalue their present opportunities, promising to themselves better advantages at a future day, in more celebrated schools. It is altogether a false idea. The idler in Canada will be an idler abroad. He may enrol his name in the most celebrated school in Europe, but he will continue as he began. It is desirable that Canadian students should visit these foreign schools of medicine; and our country has already sent many young men to Europe, who have earned for Canada a reputation which is not second to that of any land. But the advantages in Canada are much higher than is commonly supposed. Small schools are better than large ones; the closer a student is brought to the teacher the better, and the surer the progress made. Large hospitals are not better than small ones for the study of medicine, excepting in the variety and number of diseases which they present. They cannot compensate for the impracticability of those personal observations. One case well noted is better than a hundred imperfectly observed. A proper arrangement of your studies is a matter of much importance. The old adage of "too many irons in the fire" is true in the study of medicine. He who undertakes a great many things at once never succeeds. Observe a strict system of order, and permit no trivial occurrence to break in upon your arrangements. Is it necessary that I should admonish you against over study? He who trifles with his youthful vigor, in this or any other form of intemperance, will find that nature is a correct book-keeper, and that she calls on us, sooner or later for a settlement. It is said that six hours of brain work a day is as much as any strong man can bear. If he exceeds that he must break down. Cultivate the social tendencies, and seek that society which will at once cheer and improve your minds. Have a purpose in view. Do we not all work most energetically and most successfully when we have some high purpose in view? (Applause.)

In regard to your future professional position, he said, the post which you will occupy will be one of high importance. There is no dignity in medicine apart from the faithful, skilful, and honorable practice of the art. The first qualification for a physician is that of being a true gentleman, which is equivalent to being a true Christian. No man, thoroughly educated in its various branches, can be an unbeliever in the truths of religion. The medical practitioner stands most in need of the support and consolations of religion. His association is with misery, pain and death. It is his privilege to whisper words of hope to the mourner, or of hope to the departing. The lecturer then eloquently spoke of the structure of the human body, of the physical and mental powers man is capable of exerting, and the wondrous manifestations of the intellect and imagination; how the mind in search of truth unfolds the elemental relations of natural things and subsidizes their powers to her service—how the imagination in her ambitious flight holds converse with celestial spirits, whose theme is the great first cause of all; of man's divinity and his immortal heirship. He concluded his interesting lecture by a few remarks on a new branch of medical science, the importance of which in the preservation of life was every day becoming more apparent. He referred to sanitary reform and proper ventilation. He contrasted England with Canada, and drew a vivid yet truthful picture of the filthy state of the streets and back yards in the cities of this country. He was glad to find that this important subject was now an object of study by many eminent men, yet he feared little would be done in the matter unless the medical men of this country made themselves heard on the fatal consequences arising from such neglect of sanitary principles. In conclusion, he trusted the young men before him would go to work like men resolved to leave their mark in the world. You must now begin, he said, to carve your own epitaph. Let your monuments be erected before death—not of marble or brass. Let rescued men, women and children, snatched by your skill and solicitude from impending dissolution—let these be your truthful, breathing statues, and in future years you will be able to look back on a life well spent, and look forward to a holier and better yet to come! (Loud applause.)

MINOR MORALS.

Cleanliness of person, decency of conduct, and propriety of manners are as essential to the comfort and happiness of the social state as a cultivated intellect and a well-ordered store of practical

knowledge are to individual success. When regarded in their relation to society, those decencies, which have been aptly denominated "the minor morals," rise at once to importance, and demand the utmost care at the hands of those to whom the training of the youth of a country is intrusted.—*Burrowes.*

II. MEETING OF THE AMERICAN ASSOCIATION FOR THE PROMOTION OF SCIENCE.

This body held its annual meeting at springfield, Mass., under the presidency of Dr. Alexander, last August. There was a good attendance, and many interesting papers were read; the whole number registered being 108. Dr. Isaac Lea of Philadelphia was chosen president, and Dr. B. A. Gould, jr., of Boston Vice-president for the next year. The association to meet at Newport, Rhode Island, on the 1st of August, 1860.

From the reports of the meeting we extract the following abstracts of several papers, which may prove interesting to our readers:

1. PROGRESS OF METEOROLOGY IN EUROPE AND AMERICA.

Professor Henry of the Smithsonian Institute, said that extensive operations had been made in Europe and this country, by the British admiralty, the French government, the States of New York and Pennsylvania, and by the Smithsonian Institute. The Institute had purchased many hundred instruments which had been distributed over the country, but only a series of observations extending over many years could be of value. There are 350 observers in the United States who make observations three times a day. He proceeded to give some general views of meteorology. The general idea of the motion of the atmosphere was from Hadley. The moving power in meteoric changes was the sun. It was originally supposed that the currents of air flowed from the equater to the poles, but that could not be true; on account of the convergence of the meridians, there was no room for the air at the poles. There were middle systems, of intermediate currents of air. But these points were not fully established. There were exceptions in the general action which could be determined in their general bearings only by long observation. One cause of the fitful disturbances of the atmosphere was the conversion of water into vapor. During a single shower an amount of water fell upon the Smithsonian Institute building equal to 20,000 horse-power an hour; that is to say the heat necessary to evaporate it would be equal to that required for working an engine of twenty thousand horse power an hour. Another cause of disturbance was the motion of the earth itself upon its axis. In illustration, diagrams were given showing that the currents of air moved in circles,—that the same quantity of air that moved north must come from the north, of course not in the same track. Observations made tended to show a series of currents completely around the earth, north and south of the equator, also in the temperate latitudes, and in the Arctic circles. The calms at the equator, it was shown, were caused by the upward currents of the air,—currents coming from the north and south and rising over the equator, under the influence of heat.

In regard to the meteorology of our own continent, it was shewn that there were four circles,—two in the Atlantic, one of which, the Gulf Stream, completes its circle once in three years, one in the Southern Atlantic, one in the Northern Pacific, and one in the Southern Pacific. These are sub-divided into minor currents. It is found that the cold Arctic current setting south from the coast of Labrador, passes through the Gulf of St. Lawrence, while the ice which comes down sets eastward towards Europe. Between these there is produced the disposition of vapor or fog on the banks of Newfoundland. He had been assured by Mr. Wise, the æronaut, that out of 200 ascensions, he had always been enabled to move east on reaching an upper stratum of air. He (Prof. H.) therefore did not think it impossible that an ærial voyage could be made to Europe. Success would greatly depend upon the ability to make the balloon air-tight. If kept in the upper strata, it might succeed, although it was not certain there was not a reverse current in mid-ocean. In the lower strata there were irregularities which must be avoided. The balloon he considered as an important means of meteorological observation; by it, electrical phenomena and the formation of clouds could be observed. The reason why the English meteorologists had failed to make any satisfactory observations was because they lived on the western side of a great continent, with no opportunity to make observations west of them, while we lived on the eastern side of a great continent, with telegraph lines extending inland thousands of miles. He gave an account of the method of observation pursued each day at the Smithsonian Institute. They have a map of the United States hung upon a board, with pins stuck through it at the points where the observers of the Institute are stationed. The Institute has daily reports by telegraph from many of these points. Each morning an assistant hangs a cord on the pins to indicate the state of the weather—black if raining, green if snowing, brown if cloudy, and white if fair. All storms travel east, and thus they are enabled to predict with great certainty the condition of the weather twelve hours in advance. Meteorology as connected with agriculture, was then considered. It was shown that the fertility of the soil of the United States was owing to the currents from the Mexican Gulf and the Pacific; and it was shown that the climate of the 100th meridian must forever be unfruitful, unless trees should be planted, which might modify it somewhat.

2. FORMATION OF OCEANS AND CONTINENTS.

Prof. Joseph Le Conte, of South Carolina, endeavoured to prove the truth of the theory of Prof. Airy as to the laws governing bodies floating upon fluids, which he considered as explaining the phenomena of continents, oceans, and volcanoes, upon the supposition that the inside of the earth is fluid and enclosed by a crust. Prof. Le Conte gave an elaborate explanation illustrated by diagrams of different bodies floating upon water, proving that the under surface of such bodies may be judged of as to their configuration by a simple inspection of their upper surface. If there is a general rising or depression of the upper surface from the margin towards the middle we may be absolutely sure there is a general projection or hollowing of the under surface corresponding; in a word, the general outline of the two surfaces is similar. If the surface of the earth is raised by continents, a corresponding thickness or elevation must be found inside, a swelling inward of the crust; and if the outer surface is depressed as in ocean bottoms, there the inner surface is hollowed out, making the middle of the bottom much thinner than the edges. The speaker from the evidence adduced to prove these general ideas, assumed that the centre of the earth was fluid, that the crust floats upon its surface and is subject to the laws of floating bodies. The laws and conditions under which this crust cooled and its state when solidified were then scientifically explained at length, as tending to confirm the generally accepted theories as to the fluidity of the central mass. This theory, the speaker remarked, would satisfactorily account for the distribution of volcanoes, if not for the phenomena. He admitted that volcanoes were the most difficult of explanation of all the igneous phenomena in nature, and although gases and vapours are probably one cause of the eruptions, yet he thought few physical geologists would admit the local pressure of gas as the only or even ~~the chief cause. The great general cause,~~ he thought, might be the reaction of the crust upon the interior fluid, and gave his reasons therefor. At any rate the disruption of the crust should take place in the thinnest part as the bottom of the sea, and the next place should be the next weakest part or the margins of the sea, and these are exactly the places where the volcanoes occur. Of 225 active volcanoes mentioned by Humboldt, 155 are situated upon islands in the ocean, and of the remaining 70 almost the whole are situated near the sea-shore, while but very few are found in the interior of continents.

3. GYPSUM AND MAGNESIAN ROCKS.

Mr. T. Sterry Hunt, of Montreal, showed that besides those gypsums formed by the alteration of beds of limestone, another class, by far the more important, comprehends those gypsums which have been deposited directly from water. Such may be produced during the evaporation of sea-water; but Mr. H. has recently shown that sulphate of magnesia is decomposed by solution of bicarbonate of lime, giving rise to gypsum, which is first deposited, and a more soluble bicarbonate of magnesia, which by further evaporation is separated as hydrous carbonate, either alone or mingled with carbonate of lime. When these magnesian precipitates are gently heated under pressure they are changed into magnesite or dolomite. Thus are explained the magnesian rocks associated with gypsums and with rock salt. The action of solutions of bicarbonate of soda may in like manner separate the lime from sea-water and give rise to solution of bicarbonate of magnesia; in this way are formed the megnesian limestones which are not associated with gypsum. The intervention in this process of the waters of alkaline metalliferous springs will explain the metalliferous character of many magnesian rocks. The source of the bicarbonate of soda has been the decomposition of feldspathic rocks to form clays and clay slates. The action of this alkaline carbonate upon the lime and magnesian salts of the primitive sea has been the source of limestone and dolomites, as well as of the sea salt which we find in the ocean, at the same time that the intervention of the carbonic acid of the atmosphere which has been through the medium of the soda, fixed in the form of carbonate of lime, has served to purify the air and fit it for the support of higher orders of plants and animals. In this relation between the atmosphere, the argillaceous rocks, the limestones and the salt of the sea, we have a remarkable illustration of the balance of chemical forces in inorganic nature.

4. THE FLORA OF JAPAN AND NORTH EASTERN AMERICA.

Prof. Asa Gray, gave a theoretical explanation of the identity or similarity existing between the flora of Japan and that of the north-eastern part of North America. In the beginning, the speaker said that many plants supposed heretofore to be found only in the north-eastern part of North America had lately been found indigenous to Japan, and instanced the poison ivy, the fox grape, choke cherry, sweet cicely and gingseng as examples. Among shrubby plants our poison dog-wood has a prototype in the varnish tree of Japan. Closely allied species generally occur in the same, or contiguous localities, but here are identical species found on opposite sides of the globe, and the question naturally arises, what bearing have these facts on the theories of the original distribution of species? Three different views have been advanced to explain the distribution of the same plants on the globe. The first supposes them to have originated in many different localities where they now are found. This is the view entertained by Prof. Agassiz, and on this theory these peculiar plants must have originated in two distinct and widely separated districts. The second theory refers the origin of each species, to one place, but allows some of them to have been reproduced in other localities as exceptions to the general law. The third refers each species to one place only as its starting point though not from one pair, necessarily, unless it be in the case of the higher plants. This was the theory adopted by the speaker, although the facts already given as to the plants found in Japan, at first seemed opposed to such an idea. In explanation of those facts, he said the similarity of climate between Japan and New England would not be sufficient The plants of western Europe are not like those of Oregon and California, though the climate is. The idea that the seeds have been carried naturally from one country to the other is not satisfactory. He supposed the flora of this country to be older than the fauna; and that it dates back probably to the post-tertiary period. The evidence of this last he based principally on the alleged fact that fossilized specimens of our present flora have been found, and referred to about the time of the drift period; and he then explained at some length his views as to the effect produced on the vegetation by the changes in temperature during the glacial period. Whatever dispute there might be as to this last matter, the fact would not be denied that our present flora appeared soon after that period. In the diluvial epoch the temperature in this latitude must have been much warmer than it now is; the temperate flora of the present day, then also in existence, must have extended much further north, perhaps nearly up to the Arctic circle, and probably spread across from one continent to the other. Want of time prevented him from giving his views as to why he adopted the third theory of the origin and distribution of plants rather than the others; he simply wished to-day to give his views in explanation of facts seemingly opposed to it.

5. DEVONIAN AND CARBONIFEROUS FLORA OF BRITISH AMERICA.

Prof. Dawson of Montreal gave a summary of results which he had obtained from the study of the land plants preserved in the Devonian rocks of Gaspé,—the Gaspé sandstones of Sir W. E. Logan's survey. The most remarkable of these remains is a Lycopodiaceous plant, for which he had instituted the new genus *Psilophyton*; it is so preserved in the Gaspé sandstones as to exhibit all its parts in a remarkably perfect manner. Many so-called Devonian fucoids are merely fragments of this plant. The Devonian flora of Canada also includes a conifer named by Prof. D. *Prototaxites Logani*, a *Lepidodendron*, *Nœggerathia*, and *Knorria*, with some other plants not determined. In the collection of Dr. Jackson of Boston, and at Portland, Prof. D. had seen specimens indicating that a similar flora exists in rocks probably Devonian at Perry, Maine. The remainder of the paper was occupied with the result of an extensive series of Microscopic observations on the Coal of Nova Scotia, prepared by new methods. A number of beautifully preserved vegetable tissues were described, and the following general conclusions stated. 1st. The mass of the coal is of gymnospermous or cryptogamous origin, principally from sigillaria, and calamites, and accumulated by growth *in situ*. 2d. The rate of accumulation of coal must have been very slow. The sigillaria were allied in structure to cycade and conifers, and it is chiefly their bark and woody axes that occur in the coal. In a vertical foot of coal we may have the bark of a hundred successive generations of trees. The climate of the coal-producing eras was equable and moist as in the islands of the southern hemispheres at the present day. The coal forests were dense and covered large plains; as the trees fell they gradually decayed, and a dense vegetation soon covered the whole mass. The growth of sigillaria was more rapid than that of trees of the present day of like size, but their structure proves that they did not spring up in a month or two as some have supposed.

6. DEVONIAN GRANITES AND TACONIC ROCKS.

Prof. Hitchcock of Amherst then read a short paper giving an account of a deposit of fossiliferous limestone beneath granite and mica slate in Derby, Vt. He wished to call attention to this locality, as he had found something new to him, and leading to different conclusions than those commonly held. This deposit occurs near Lake Memphremagog. He showed by diagrams the granite overlying the limestone, and what was singular, the former dipped down into the latter in veins and there terminated. He called on Sir William Logan of Montreal for his views on the subject. The latter said that on the Canada side of the boundary line this limestone had been traced from Memphremagog lake near Derby, to the Gulf of St. Lawrence in Gaspé, a distance of 500 miles. It was well stored with fossils at several places, and appeared to be partly Upper Silurian and partly Devonian. One of the localities of fossils was Memphremagog lake, when the fossils appeared to be allied to Devonian forms. In this neighbourhood there are masses of granite. Bebee's plain bordering on the lake presents an area of thirty-six square miles of granite from which emanate dykes cutting and dislocating the calcareous strata. From this it is evident the granite is newer than the limestone, and therefore may well be found occasionally to overlie it. The granite he considered to be of the same age as that so widely extended in New Hampshire and Maine: it has been traced to New Brunswick, and at Bathurst was found to underlie the coal formation. Its age would thus be Devonian. On the west side of the Green Mountain range there was a calcareous area related to the limestone at Rutland, which, from a section he had lately made eastward from Lake Champlain in the neighbourhood of Burlington, he considered to be of the same age as that at Memphremagog.

Sir William Logan then referred to the black slate outside of Sharp-Shins near Burlington, as an instance of Taconic slates, these he had found lying conformably beneath the magnesian limestones of the same point, and at Apple-tree Point on the outside of this he had found, among similar slates, *Triarthrus Beckii*, a fossil known to belong to the shales of the Lower Silurian series. The magnesian limestone and the black shales beneath, he had traced in the same relation almost without a break, to the Canada boundary. From Quebec he had traced black shales and magnesian limestone, in the same relation to the same point on the boundary line. At Quebec both the shales and the limestone were characterized by rock-marked fossils. The fossils of the shales were those of the Utica slate and Hudson River Group, and he had no doubt that the slates of Sharp-Shins were of the same age.

7. ON THE LAURENTIAN LIMESTONES.

Sir William Logan exhibited to the section, a map on which was delineated in detail on the scale of an inch to a mile, the distribution of some of the bands of crystalline limestone interstratified with the gneiss of the Laurentian series of rocks on the north side of the Ottawa River, about forty miles above Montreal. This he explained was a continuation of similar work shown at the Montreal meeting of the association. By his recent exploration, two additional bands of limestone had been ascertained to underlie the lowest of those previously examined, the whole of the strata associated with these lower three, including the limestones, being supposed to be about 15000 feet thick. These three bands are separated from one another by gneiss, a large portion of which is porphyroid or coarse grained, the feldspar being almost wholly orthoclase, whereas, as was stated at the Montreal meeting, calcareous bands above them are largely associated with labradorite. Interculated with the coarse and massive orthoclase gneiss, were frequent beds, which may be characterized as mica slate, and approaching the calcareous bands are beds of hornblende rock, and quartz rock, these latter, and sometimes bands of nearly pure white orthoclase, when immediately near the limestone or interstratified with it, being very often thickly studded with pink garnets; one of the beds of white and nearly pure quartz rock, which was traced for a mile and a-half, presented a thickness of 1000 feet. No instance of clay slate was met with. These strata are exceedingly corrugated, and the outcrop of the limestone presents a multitude of sharp turns resulting from small plications subordinate to more important synclinal and anticlinal forms, the axes of which appear to run nearly north and south. Some of these axes have now been traced up the Rouge, a tributary of the Ottawa, for a distance of fifty miles in a straight line. Although the Laurentian series has hitherto been considered azoic, a search for fossils in them has not been neglected. Such search is naturally connected with great difficulties. Any organic remains which may have been entombed in these limestones, would, if they retained their calcareous character, be almost certainly obliterated by crystallization, and it would only be through their replacement by a different mineral substance that there would be a chance of some of the forms being preserved. No such instances had been observed on the investigations of the Rouge and its vicinity, but from another locality in the Laurentian formation, Mr. John McMullin, one of the explorers of the Geological Survey, had obtained specimens well worthy of attention. They consisted of parallel or apparently concentric layers resembling those of coral *Stromatocer*

ium, except that they anastomoze at various parts, the layers consist of crystalline pyroxene, while the interstices are filled with crystallized carbonate of lime. These specimens had re-called to recollection others which had been obtained from Dr. Wilson of Perth some years ago, and had not been regarded with sufficient attention. In these similar forms are composed of green serpentine, concretionary, while the interstices are filled with white dolomite. If it be supposed that both are the result of mere unaided arrangement, it would seem strange that identical forms should result from such different minerals in places so far apart. If the specimens had been obtained from the altered rocks of the Lower Silurian series, there would have been little hesitation in pronouncing them to be fossils. The resemblance of these forms to *Stromatocerium* from the Birdeye limestone, when the coral has been replaced by concretionary silica is very striking. In the pyroxenic specimens, the pyroxene and the carbonate of lime being both white, the forms although weathered into strong relief on the surface, are not perceptible in fresh fractures until the fragments are subjected to an acid, the application of which shows the structure running throughout the mass. Several speciments of supposed fossils were exhibited to the section.—*Canadian Naturalist.*

III. Biographical and Personal Sketches.

No. 25. SIR JAMES STEPHEN, K.C.B., LL.D.

Intelligence has been received of the death of the Right Hon. Sir James Stephen, K.C.B., Essayist and Professor of Modern History in the University of Cambridge. He was born about the year 1790 and was the son of Mr. Stephen who took so active a part in the suppression of the slave trade. Sir James was educated at Cambridge, became a student of law, and was called to the bar at Lincoln's Inn in 1811. During the existence of the Melbourne Ministry he was appointed as permanent Under Secretary of State for the Colonial Department, and held that position until 1848, when he resigned. He was knighted at this period, and shortly afterwards was nominated a member of the Board of Council for Trade and Foreign Plantations. In 1849 he was appointed Regius Professor of Modern History at Cambridge, which post he held until his death. He has been distinguished as a writer of great force on historical topics, having published a series of articles in the *Edinburgh Review*, which attracted almost universal attention, especially after their publication in a collected form in this country. Among his labors were two volumes of "Lectures on the History of France."

No. 26. ISAMBERT K. BRUNEL, Esq., D.C.L., F.R.S.

Died, on the 16th ult., from paralysis, Mr. Isambert Kingdom Brunel, the distinguished engineer. He was immediately of French descent, his father, Sir Mark Isambert Brunel, who was also renowned in the same science, being a native of Rouen, and received his knighthood on the completion of the Thames Tunnel. Isambert the son, was born at Portsmouth, England, in 1806, where the elder Brunel was employed in constructing the docks of that famous seaport and arsenal. While very young he was sent to France and educated at the College of Caen, in Normandy. On his return to England in 1826, he was engaged to assist his father in constructing the Thames Tunnel, of which he was resident engineer. During the progress of this stupendous work he was, on several occasions, exposed to imminent danger from the irruption of the water, especially in 1828, when, being surprised by the current about six hundred feet from the mouth of the tunnel, he was seized by the water and thrown upon the beach, sustaining, however, but little injury. Some years before the completion of the tunnel, namely, in 1833, he was appointed to construct the Great Western Railroad, upon which he employed all the resources of science, and displayed a skill as an engineer which was never before and has never since been equalled. The famous Box Tunnel on this road was entirely his work. The longest suspension bridge in England, that of Hungerford, over the Thames, was designed and built by him. He assisted Mr. Stephenson in floating and raising the Conway and Britannia tubular bridges, one of the most difficult enterprises on record. He was also engaged in the construction of the Tuscan end of the Sardinian railway, and during the late war with Russia was employed to construct and organize the hospital of Renkioi, situated on the Dardanelles, and intended to afford accommodation to no less than three thousand sick and wounded at one time. These are only a portion of the land works to which he has devoted himself. Most of the large docks at all the principlal seaports of Great Britain were either wholly constructed or completed by him. Nor was his genius confined to railroads, bridges and tunnels. He was also the constructor of the Great Western, the first colossal steamship which traversed the Atlantic, and whose arrival in the waters of our Bay will be well remembered by most of our readers. That famous ship was then considered a monster of the deep, being 236 feet in length by 35 feet 6 inches in breadth. Since her time the Great Britain, the Persia, and all of the Collins line, have exceeded her in length, especially the Persia, which is 300 feet long. The Great Eastern is nearly three times her length, and to this last crowning work of ocean navigation Mr. Brunel's fame is also intimately attached. Mr. Scott Russell designed her lines and constructed the iron hull of the ship. But Mr. Russell acknowledges that it is to Mr. Brunel, as the Company's engineer, that the original conception is due of building the mammoth ship. The idea of using two sets of engines and two propellers was also his. It was his idea, also, to introduce a cellular feature, like that at the top and bottom of the Britannia Bridge, into her construction. These are the main characteristics which distinguish the Great Eastern from other ships, and these are Mr. Brunel's. The launching of the ship, her rigging and masting, her cabins and her outfit, were under Mr. Brunel's superintendence. Besides the regret which will be felt at his death—involving, as it does, such a loss to engineering science—it must naturally be a source of grief not only to his friends, and fellow artists in the construction of the monster vessel, but to the public at large, in England and in this country, who share so much interest in her success, that he was not spared to witness it, and be a living partaker in her renown. He was not able to be on board of her at the exciting time of her liberation from the Thames, and her triumphal progress till she emerged into the Channel. Possibly he heard of the disastrous explosion on board, a short period before his decease, but the dispatch which informs us of his death contains no particulars.—*N. Y. Times.*

No. 27. JAMES HENRY LEIGH HUNT, ESQ.

Leigh Hunt was born at Southgate, in Middlesex, Oct. 19, 1784. His father, by birth a West Indian, had married an American lady, and was residing in North America when the War of Independence broke out. Taking the loyalist side in the strife, he was obliged to flee to England, where he took orders in the English Church, and was for some time tutor to Mr. Leigh, nephew of the Duke of Chandos. Of several sons Leigh became the most distinguished; he was educated, as his friends Coleridge, Charles Lamb, and Barnes, afterwards well known as editor of the *Times*, had been at Christ's Hospital, London; and even while there he revealed his natural genius for literature by numerous attempts in verse. After leaving Christ's Hospital, at the age of fifteen, he was for some time in the office of one of his brothers, who had become an attorney, and afterwards he had a situation in the War-office. While in these employments he contributed to various periodicals. In 1808 Mr. Hunt left the War-office, at the age of twenty-four, to become joint editor and proprietor of the *Examiner* newspaper—a journal, the high reputation of which, both for liberal politics and literary ability, was first acquired under the management of the Hunts. The reputation, however, was not acquired in those days of political persecution, without some serious personal consequences to the partners. Although more literary than political in his tastes, the articles of Leigh Hunt, as well as of his brother, were of a kind to give offence to the ruling powers of the day; and on three several occasions the *Examiner* had to undergo a prosecution and Leigh was imprisoned.

Among the literary fruits of his leisure in prison, were "The Descent of liberty, a masque," and other pieces, in verse, 1815; and the well-known "Story of Rimmi," 1816—the last of which gave the author at once a place among the poets of the day. In 1818 appeared "Foliage, or poems, Theocritus, Bion and Moschus, and Anacreon, and from the Latin Catullus." About the same time Mr. Hunt started the *Indicator*, a small weekly paper, on the model of the Queen Anne Essayists. In 1823 he published "Ultra Crepidarius, a Satire on William Grifford"—a retaliation on the "Quarterly Review" for its severe treatment of the school of poetry to which Mr. Hunt was most closely related. Before this satire was published, however, Mr. Hunt, whose circumstances had not recovered from the confusion into which they were thrown by his imprisonment and by the expenses of the *Examiner*, had accepted an invitation from Shelley and Lord Byron, and goes over to Italy (1822) to assist them in carrying on the *The Liberal*, a Journal the opinions of which were to be of an extreme kind, both in politics and literature. The death of his kindest friend, Shelley, at the very moment of his arrival (July 1822), was a heavy blow to his fortunes; and, though Mr. Hunt lived for a time under the same roof with Lord Byron, the connection was not of a kind to last. *The Liberal* was discontinued—Byron and Hunt parted, less mutually friends than when they had met. Byron died in 1824; and after living with his family some time in Italy, Mr. Hunt returned to England. The publication in 1828 of "Lord Byron and some of his Contemporaries, with Recollections of the Author's Life and his Visit to Italy," gave much

offence to Lord Byron's admirers and especially to Moore; and Mr. Hunt has himself subsequently declared the criticisms of Byron's personal character and behavior there contained to be unnecessarily harsh and bitter. In 1828 Mr. Hunt (who had meanwhile been contributing largely, together with Lamb, Hazlitt, &c., to various preiodicals, including the *London Magazine*) started *The Companion*, a kind of sequel to the *Indicator*; and the *Indicator and Companion* re-published together in 1834, has been deservably among the most popular of modern collections of light and beautiful essays. In 1833 was published a collected edition of Leigh Hunt's poetical works, sence superseded by later editions, which include, in addition to other later poems, his celebrated "Captain Sword and Captain Pen," first published separately in 1835. Of Mr. Hunt's later works, the following are the chief:—"Imagination and Fancy" (a series of extracts from the English poets, with five critical elucidations and a prelininary essay on poetry), 1844; "Wit and Humor" (a similar collection, 1846;) "Stories from the Italian Poets, with Lives," (a collection of admirable translated pieces), 1846; an edition of the "Dramatic Works of Sheridan," with biography and notes, 1846; "Men, Women, and books, a selection of Sketches, Essays, and Critical Memoirs," 1847; "A Jar of Honey from Mount Hybla" (a collection in prose and verse), 1848; "A book for a Corner" (also a collection of pieces in prose and verse), 1849; the author's "Autobiography," in 3 vols., 1850; a volume of "Table-talk, with Imaginary Conversations of Pope and Swift," 1851; "The Town, its remarkable Characters and events" (a delightful book of gossip about London streets), 2 vols., 1848; "The Religion of the Heart, a Manual of Faith and Duty," 1853; a collection of "Stories in Verse," from the author's earlier writings, 1855; and "The Old Court Suburb, or Memorials of Kensington, regal, critical, and anecdotical," 2 vols., 1855. In 1847 Mr. Hunt received from the crown a literary pension of £200 per annum.

No. 29. MR. JOHN HEAD, ONLY SON OF THE GOVERNOR GENERAL.

It is difficult to describe the deep and universal feeling of sympathy which has pervaded the community since the intelligence of Mr. Head's melancholy death was received so unexpectedly.* The feeling moreover, is by no means alone due to the fact of Mr. Head's being the son of the Governor General of Canada. There are many in both sections of the province who knew by association with Mr. Head how promising was his career; how kind and gentle was his manners; how earnest was his devotion to scientific studies, and how largely he shared the affection of his parents.

Mr. Head was born, we believe, on the 5th March, 1840, shortly before his father became a member of the Board of Poor Law Commissioners. He studied nearly three years at Harrow previous to Sir Edmund Head's appointment as Governor General of Canada; having been left in England during his father's occupancy of the Governorship of New Brunswick. In the fall of 1855—after the removal of the Seat of Government from Quebec to Toronto, Mr. Head joined his parents, and at once entered Upper Canada College. From thence Mr. Head went, in 1857, to Heidelberg, and continued there until about three weeks previous to his return to Canada in the early part of the last month. Mr. Head's natural disposition and capacity for scientific study were, even when he was almost a child, so much beyond what is commonly seen, as to attract general attention. Every hour was turned to some account in the field of Natural History, and as an illustration of his remarkable talent, we may mention that two years ago, when he was only seventeen, he had discovered several fossils not before set down in scientific catalogues; the principal of which is now known as *Graptolithos Headi*, a remarkable Graptolite found at Point Levi. His love for Geological and Chemical studies was conspicuous during his residence in Toronto, and while in Heidelberg, he had the opportunity of studying Pæontology under the celbrated Dr. Bronn. For one so young, his collection of minerals and fossils might fairly be said to be extraordinary. Every day he made some addition to it, and while in Germany, he took particular delight in visiting localities most noted for fossil remains; and it is not remarkable that with such natural and cultivated tastes, Mr. Head's greatest ambition was to become a professional geologist; and there is the best reason for believing that but for the mysterious dispensation which has removed him to another sphere, he would at no distant day have taken his place among the most distinguished *savans* of the world. Mr. Head's talents, not less than his habits of application, were of the highest order. He was acutely observant, with a remarkable memory, especially of localities. Having seen a place even but once, he has been known to point out, years afterwards, its minutest characteristics, with the utmost accuracy. To this brief tribute, we can only add, that it was intended, had he lived, that he should have gone to Oxford, where he would have passed his terms contemporarily with the Prince of Wales, of whom he was nearly one year the senior in age.

At a quarter past three, the procession moved slowly from Spencer Wood to St. Michael's church; the Governor General, Lady Head and Miss Head occupying the first carriage as chief mourners. In the second carriage were Sir Fenwick Williams, and the Aides-de-camp in waiting. Here, a portion of the burial service was read by his Lordship, Bishop Mountain, assisted by his chaplain, The procession then formed to the Cemetery; Sir Edmund with Lady Head on his arm, walking the remainder of the way. The body was deposited, temporarily we believe, in the ground belonging to Wm. Price, Esq., and over the grave the remainder of the burial service was read by the Bishop, while the chief mourners, all but heart broken, stood silently side by side, and saw the grave close on their best and brightest hopes. The solemn company then gradually dispersed.—*Quebec Chronicle.*

* Accidentally drowned while bathing near the Grande Mere Rapids, at Three Rivers.

No. 30. MAJOR-GENERAL SIR WILLIAM EYRE, K.C.B.

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 Thursday last, 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 Lieutenant-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 in the army, and appointed an Aid-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 Lieutenant-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 after the fall of Sebastpol, 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 Honour, a Knight of the Imperial Order of the Medjidie of the Second 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. The late General was one of the field officers in the receipt of rewards for distinguished or meritorious services. Sir William was second son of the late Vice-Admiral Sir George Eyre, K.C.B., by the third daughter of Sir George Cooke, Bart., of Wheatley. He married in 1841 Miss Bridgeman Simpson, third daughter of the late Hon. John Bridgeman Simpson.—*London Times.*

IV. Papers on Colonial Subjects.

1. ARCHITECTURAL REMAINS IN THE NORTH-WEST.

Speaking of M. de la Verendrye, who conducted the first expedition ever made to the Rocky Mountains, M. Garneau, in the third edition of his *Histoire du Canada*, says:

"This celebrated traveller recounted to the *savant* Swede, Kalm, who then visited Canada, that he had found in the most distant countries which he had traversed, and which he supposed to be 900 leagues from Montreal, large columns of stone in a single block, supported against one another, or laid one upon the other like the stones of a wall. They could not have been thus arranged but by the hands of men; and one of them surmounted upon another was very small, not being more than a foot in length by four or five inches wide, and bearing on its two faces unknown characters. This stone was conveyed to the Secretary of State at Paris. Several Jesuits who had seen it in Canada told Kalm, that the figures which it bore resembled Tartar characters. The Indians stated that the blocks had been there since time immemorial. The Tartaric origin of the characters appeared very probable to Kalm, and served to confirm the hypothesis, of an Asiatic emigration, which would account for the origin of at least a portion of the savages of America."

Humboldt, in his *Aspects of Nature*, mentions the same fact; but he did so on the authority of Kalm. He sought in vain for the stone in the collection of Count Mausopas, at Paris. It is singular, if such architectural remains were found that they should not have been discovered in larger quantities, as in Mexico and Central America. It is true there are portions of country this side of the Rocky

Mountains of which less is known of Mexico or Central America; and it may be that some future Stephens may bring to light what is now unknown. It is a popular error, however, to suppose that Stephens was the discoverer of the remains which he described. They had been discovered by the early Spanish voyagers, and described by the old Spanish chroniclers, three centuries before. We have, however, no account of extensive architectural remains so far north as the uncertain point—probably somewhere about the head waters of the Missouri—where those described by Kalm were found. It is not probable that any considerable architectural remains will be discovered so far north; for the ancient civilization—the civilization of Egypt and India—as well as that of Mexico, Peru and Central America, flourished in only warmer climates; and it is extremely doubtful whether it could have existed so far north as the source of the Missouri. This circumstance alone causes us to doubt whether any considerable extent of architectural remains exist in the neighborhood where those described by Kalm are reported to have been found.—*Toronto Leader.*

2. HISTORICAL DOCUMENTS RELATIVE TO CANADA.

Some time ago, the French Minister of Public Instruction charged M. Pierre Margry with the collection of documents relating to the history of Canada; but it appears that a new occupant of that office, feeling less interest in the subject, is not disposed to carry out the promises of his predecessor. And it has become a question with M. Margry whether he should publish the collection at his own risk. He previously made a collection of historical documents for the State of New York and another for Louisiana. The documents which he has copied relating to Canada commence with the era of Colbert and end in 1742; so that to close the French history of Canada there are 21 years more to be completed. M. Rameau is also giving to the public a work of the same kind, and M. Dussieu has commenced the publication of a collection of documents relating to the French in America and more especially in Canada. M. Garneau is on the point of publishing a new addition of his *Histoire du Canada*, considerable augmented in consequence of his having access to documents not previously within his reach. Thus the French portion of his history of Canada is in a fair way of receiving ample elucidation.—*Ibid.* [See page 160.]

3. CANADA AS A HIGHWAY FOR TRAFFIC—HER UNCEASING EFFORTS TO DEVELOPE IT.

The geographical position of Canada places its territories between these of Western America and the Atlantic Ocean. The great river St. Lawrence and the vast inland lakes with which it is connected, offer a natural and convenient highway for the traffic of the West. Were it not for the ice of winter and certain difficulties in the navigation, it is probable that Quebec would have become the great emporium of this commerce in the spite of all competiton. But the people of the United States, fully alive to the interest at stake and animated by the importance of the contest, omitted no efforts to give this lucrative traffic a turn towards the south. A slight deflection would do the work and carry it off to the ocean by New York and Boston, instead of through the waters of the St. Lawrence. At first the Americans succeeded. While Canada was engaged with locks and light-houses, canals and tug-boats, the United States pushed on their chain of railways, and Boston and New York became fairly the *termini* of Atlantic navigation. Canada, however, was keen, resolute and unconquerable. She held on her course with steady pertinacity, and the British Government encouraged her exertions by guaranteeing a loan. At last, after expenditure of millions, the route was complete, and the course of traffic to the mouth of the St. Lawrence was as clear as to the American ports. But here there arose another difficulty. The Americans had, as it were, possession of the ocean. Liverpool had been linked by great steam navigation companies to New York and Boston; in those ports were the finest vessels, and to those ports therefore, would commerce still tend—that of corn from the West, that of men from the East. Not to be outdone in the struggle, Canada then built steamers of her own, and suddenly appeared with an Atlantic fleet, like the Romans against the galleys of the Carthaginians. Thus at length, the field seemed fair, and if, other things being equal, Canada had really the best ground, now was the time for Canada to win.

In these days, commerce, like war, is an affair not merely of courage and resolution, but of loans and subsidies. Canada found arrayed against her not only steamers, but subsidized steamers; not only rival lines, but rival lines established and maintained by the contribution of her own natural protector and ally. The Cunard line and the Galway line, both running from British, not to Canadian, but to American territory, were founded upon subsidies from the British Government, so that our own royal dependency was likely to be worsted in the race through the aid which we ourselves contributed to her competitors. What was Canada to do? She had already pushed abreast of her rival at all other points; she had opened communications, constructed railways, and launched a steam fleet. There was only one thing more to be done, and that was to subsidize her own line, as we had subsidized the lines against her, and this she did. She had spent £650,000 in building her steamers; she now paid £45,000 a year to put them on a level with ours, and the enterprise has succeeded. The Canadian line is as good as the Cunard line, and it would be hard to say more. One of its vessels —the Hungarian—has actually made three consecutive voyages across the broad Atlantic in less than 28 days altogether.—*Times.*

Notice has been given that the Grand Trunk Railway will be open for continuous traffic from Detroit to Portland, on the 7th of Nov.

4. EDUCATIONAL FEATURES OF THE LATE PROVINCIAL EXHIBITION AT KINGSTON.

At the request of the Committee of the Provincial Agricultural Exhibition, the Chief Superintendent consented to make a selection of articles from the Map and School Apparatus Depositories for exhibition, at the recent fair at Kingston. The articles selected were of Canadian manufacture, and embraced a great variety of Maps and Rotary Map Stands and Cases, beautifully raised or embossed Maps of Ancient and Modern Greece and Italy, Globes in various processes of manufacture, Astronomical Apparatus, and Apparatus illustrative of Natural Philosophy, Pneumatics, Electricity, Electro-Magnetism, Optics, and Chemistry. The Toronto *Leader*, referring to the exhibition, remarked as follows:—

"The ground is extensive, and nicely laid out. The Exhibition building is erected in the centre of the plot. It is, like the Crystal Palace in Toronto, built of wood and glass, but is different in shape, having wings extending to either side of the main hall. One end of the hall is devoted to ladies' work and fine arts, and some miscellaneous articles; and the other exclusively to agricultural and horticultural products. One of the wings is occupied to a great extent by a display from the Educational Department, Toronto. . . . This display is worthy of special mention on this occasion, as nearly all the articles shown in the collection have been manufactured in Toronto. The globes have been made by Messrs. Jacques & Hay, the brass work manufactured by Mr. Potter, and the lithographing by Maclear & Co. The largest sized globe is thirty inches, and the smallest three inches in diameter. The maps are the most complete yet published; those of China and Japan having marked on them the late treaty made by Lord Elgin, and the times at which the various ports became open to commerce. Some such peculiarities are shown on all the maps."

The Toronto *Colonist* also observes that "The articles from the Educational Department comprize a selection of globes of various sizes, ranging from three to thirty inches in diameter, maps mounted and on framed rollers; a beautiful air pump made by Potter, King Street; an electrical machine by the same maker. Potter also exhibits a very useful instrument for city surveyors, and the finish and style of these instruments is in every respect equal to those of English make. The globes are made in Toronto by Jacques & Hay, and the maps are also designed and finished in Toronto. They also exhibit a raised map of Modern Italy, which shows very distinctly the physical features of that country."

The Brockville *Recorder* remarks that "In the Educational Department the collection of maps and other School Apparatus was quite extensive. The raised Maps of Ancient Greece and Italy are worthy of mention, as exhibiting a different method of delineation."

5. THE ENGLISH LANGUAGE IN LOWER CANADA.

A statement has been recently made by the *Toronto Leader* to the effect that the English language was almost excluded from the French Colleges and Schools in this part of the country. We deem it necessary to correct that statement. In every college in Lower Canada the English language is taught and in some of them most efficiently. According to the report of the Superintendent of Public Instruction for Lower Canada, for 1858, which is now printing, the number of French pupils in the Colleges and Academies learning the English language is 7968; that of the English pupils learning French is 1765. Besides this there is hardly a Model School, in the French parishes in Lower Canada, where English is not studied with more or less success; it is taught in many elementary schools; and there is everywhere a very strong disposition on the part of the parents to have it taught. The total number of French children who are learning to read and write the English language cannot be less than 40,000. We have no exact figures by which we could judge of the number of children learning French in Upper Canada; but we have every reason to believe that it bears a much smaller proportion to the total number of pupils than in England and in

the most enlightened parts of the United States. Even in Lower Canada it is but very recently that the French language has been taught effectually in the higher English educational institutions. It is to be noted also that with two or three exceptions, all the French Canadian members of Parliament understand English; most of them can speak it and some among them have frequently addressed the house in that language with great fluency and correctness. No Upper Canadian ever addressed the House in French, if we except the speakers, who, on two or three occasions, returned thanks in both languages. We do not pretend to say that the French Canadians are not as firmly attached to the language of their forefathers, as the English are to the Anglo-Saxon idiom; but we wish, as far as it lies in our power, to repel the charge of their being blindly and irreconcilably opposed to the use of a language, so highly serviceable, and which they are neither unable nor unwilling to master.—*Journal of Education for Lower Canada.*

V. Papers on Practical Education.

1. TOO MUCH MACHINE-WORK IN SCHOOLS.

What instruction in musical art and skill does one gain by seeing an organ-grinder adjust his keys and grind out a tune? Thousands of teachers are mere organ-grinders, who make organ-grinders of their pupils. To illustrate, let us step into some school-room and take a look at one of them. Here the teacher calls out a class, which is his hand-organ, and the book serves for its handle. A shuffling of leaves and the "keys" are adjusted. Then commences the grinding. 'Tis a humdrum operation, but you are expected to endure it without manifesting the least impatience. An occasional relief may be had, however, by the discord of missing "note" in the "responses." This tune (lesson) unexplained, unexplored, is thus mechanically, but not skillfully, ground out, the class excused, and another called up. Then follows another adjustment and another grinding. So the hours are worn away, so the days, so the weeks. And what comes of it? A whole troupe of young organ-grinders.

Whose fault is it? Partly the teacher's, partly the public's. Those who are teachers indeed, must endure six hours of active mental labor per day, and at least six hours more of hard study. For a teacher who would hear a recitation properly, and impart instruction thoroughly and critically, must be so prepared as not to need the book at all. He must be perfectly familiar with the lesson and all its bearings. Then his pupils must be required, not merely to recite rules and definitions parrot-like, but to study *principles.* It is time. Every young hopeful must have four, five, or six studies, when no one should have more than two or three at one time. Then they must be *got over* a certain amount in every department, or the public blames the teacher. This is all wrong, and teachers know it. But what can they do? They have neither time nor strength to prepare for the multiplied duties of the school-room, and hence they follow the beaten path and go unprepared. Such become organ-grinders from pure necessity. But they should not submit so passively, even though it please the mistaken public. A nobler work is theirs. A change must be brought about, and and will be. How, and by whom? Ah, fellow-teachers, here is a work for us as great as any our predecessors have accomplished. The public mind, which is slow to enlighten itself, especially in matters pertaining to education, must be enlightened. And by whom but the public teachers? We must address ourselves to the task of convincing the public by theory and by practice, if need be, that five hours per day in the school-room, with half the usual number of exercises, would be infinitely better for all than the present arrangement. This impression once fixed, the victory is won, and a blessing to humanity secured. Teachers could then be so prepared as to act with skill and vigor, and scholars would not grow dull and weary. They would be no longer mere dull machines, but live boys and girls, thoughtful and attentive because properly cared for and properly instructed. It will cost many a bold stroke and manly struggle to accomplish the desired change, but the future will repay it all. Let us try!—*Maine Teacher.*

2. IMPORTANCE OF A LONGER COURSE AT SCHOOL.

The age of fourteen is too apt to be thought the proper one for boys to leave the public schools, and where they do not intend to enter the high schools, to stop all book instruction, and enter at once into the occupation of "'tending store," so fascinating to school boys, and too often encouraged by inconsiderate parents as the beginning of learning to earn their own living. In many cases this plea is necessary, and the boy, unfitted by his education to discharge the duties expected from him by his employer, shifts from one occupation to another, ultimately regretting that he had not spent more time in school, and feeling too old to return to his books. This is no fancy sketch. A boy, to whom I was talking about leaving a public school at fourteen, told me that his case was precisely like that, and that he had been sorry for it ever since. Parents who prefer, even at some sacrifice, to have their boy continue longer in school, find it difficult to carry their good intentions into effect, for the boy will meet his arguments as my boy did mine, by saying that his classmates had left for the high school or to tend stores, and if he were required to remain he could only go over former exercises, and feel mortified that it should look as if he was not far enough advanced to do as his classmates had done.

Now the course, it seems to me, for parents to adopt in this intricate question, is to take every opportunity to impress, at an early age, on the minds of their children, the necessity and advantages of being willing to go to school for a longer time, and that the boys who leave at fourteen, or earlier, make no more real progress in putting themselves to earning their living than those who give more time to their studies, and when they do leave school, go ahead at once in getting better employment, for they are better qualified for obtaining it. Any intelligent employer will tell them that such is the fact. And that it is so is confirmed by the remarks of Mr. Mann, that the large cotton mills in Lowell find that the most intelligent operatives are the most profitable. It may be observed that boys and not girls form the subject of remark. This is owing to the fact generally noted, that the girls remain longer at school, and of course become better scholars. The first class in reading in our grammar schools contains so few boys that any visitor would observe it, and if he should ask the reason, the teacher would tell him "the boys had left for high school or for tending store."

The writer hopes that he is not instrusive in these observation, and that the attention of school teachers and parents will be called to the "failure in teaching" caused by the short stay for the purposes of education, and the consequent hurrying through the different branches of instruction now so lamentably common, owing more to the ignorance or willfulness of parents and children than to the negligence of the teacher.—*R. I. Schoolmaster.*

3. DUTY OF THE COUNTRY TO EDUCATE ITS CHILDREN.

In Prussia it is said that every child is "due to the school.' Here, it may be laid down as one of our social principles, that, as the best services of all her children are due to the State, so it is the duty of the State to bring out, to their fullest extent, all the talents and powers for the good of all her children.—*T. H. Burrowes.*

4. WHY SHOULD I HAVE TO EDUCATE OTHER PEOPLE'S CHILDREN?

You say you have no children to educate, and why should you be taxed to educate the children of your neighbor? So, perhaps, you have no occasion to travel over a particular county road, and why should you be taxed to build it? You have no case in court, why then should you be taxed to build the court-house, or pay the salary of the judge? You have no criminals of your own family to try, and to put in jail, why then should you be taxed to pay the expense of trying criminals raised by your neighbors, and to build jails to hold them?

You answer, the good of society requires court-houses and courts. So does the good of society require school-houses and schools. You say that the good of society requires that criminals should be tried and punished. So does the good of society require children to be educated. The criminal, you say, is not tried and punished for his own benefit, or the benefit of his family, so much as for the protection of society. So, the child is not educated so much for his own benefit, or the benefit of his family, as for the protection and the good of society.—*Hon. W. C. Larrabee.*

5. ARGUMENT FOR THE PAYMENT OF SCHOOL TAXES.

Some persons who are willing to pay taxes in proportion to their property, for general purposes, object to any species of taxation for educational purposes. This objection is founded on a radically wrong notion of the relation of the children, and the education thereof, to the State. The State, within constitutional limits, has sovereign power over the property within its jurisdiction. The children within the State are, in a certain sense, the children of the State. The State taxes her property for the education of her children, not for the personal interest of the children, nor for the interest of their parents, but for her own interests as a State. This is the American idea, and whoever cannot become reconciled to this idea had better emigrate to some other country.—*Maine Teacher.*

6. TESTIMONY AGAINST FLOGGING.

In truth the maxim is rapidly fixing itself in the public mind, that the ability to govern, by moral means, an appropriate number of pupils, is a fair test of the capacity and fitness of the teacher. Failure to govern well a class of forty or fifty children, without the use of the rod, is fast coming to be considered an indication that the teacher has mistaken his vocation. And I must take occasion to remark, as a fact within my official observation, that the order and excellence of those schools is precisely of the higher character, which in their government have dispensed altogether with corporal punishment.—*Maine Teacher.*

7. READ GOOD BOOKS ONLY.

The character of the books which are read by the children of the school or the family will leave its impress upon their minds. No teacher or parent should neglect to act upon this truth. Let only those books be read which are pure in sentiment and in language. The novel should have no place in the list. Life is earnest and real, not a fiction. This is a fact not sufficiently remembered. Be watchful, fellow teacher, for the best good of your pupils.

8. WHAT A GOOD PERIODICAL MAY DO.

Show us an intelligent family of boys and girls, and we shall show you a family where newspapers and periodicals are plentiful. No body who has been without these silent private tutors can know their educating power for good or evil. Have you never thought of the innumerable topics of discussion which they suggest at the breakfast-table; the important public measures with which, thus early, our children become familiarly acquainted; great philanthropic questions of the day, to which unconsciously their attention is awakened; and the general spirit of intelligence which is evoked by these quiet visitors? Anything that makes home pleasant, cheerful, and chatty, thins the haunts of vice, and the thousand and one avenues of temptation, should certainly be regarded, when we consider its influence on the minds of the young, as a great moral and social blessing.

9. THE WONDERFUL POWER WHICH READING CONFERS —BOOKS FOR WINTER LIBRARIES.

Were every one confined to his own personal observation, how limited would be his knowledge, not only of the great principles of science and of the changes time has wrought, but of the vast open book spread around, above and beneath us!

Books have been termed "the spectacles with which we read Nature;" and how little could we know of the blue vault above us, that magnificent orrery formed by an Almighty hand, without the recorded opinions, discoveries and conclusions of astronomers? What could we know of the atmosphere around us, of its qualities, constituents and powers? what of the wonderful variety, beauty and adaptedness of the vegetable kingdom? what of the formation and structure of the earth?—unless some, in many ages, had added link after link to the great chain of discovery!

"In books we have the best products of the best minds;" but every book is not one to be read. Among those which are pre-eminently worthy our attention, are histories, travels, biographies, and works of a moral and religious character. Let a lover of novel reading sit down to the perusal of Prescott's Philip 2d, or Ferdinand and Isabella; to the travels of Dr. Livingstone in Southern Africa, or Kane's Aretic Expedition; to the biographies of Capt. Vicars, Capt. Bate, Sir Fowell Buxton, or Amos Lawrence; or to English Hearts and Hands, Ministering Children, or any of the thousands of beautiful and attractive books now issued from the press, and he will find tropics more engrossing, language purer and more elevating, scenes more instructive, and lessons more just to life and nature, than any depicted on the most elaborate page of fiction.

Any thing worth reading at all, should be read with deliberation, with reflection, and, if need be, with reception; with a full understanding, so far as possible, of the author's meaning; and with a critical attention to his style and expression. Truth should be seized wherever it is found, and error repudiated whatever garb it may assume. Reading should be a recreation after the severer toils and studies; it should come as a solace to the weary and harrassed frame; it should cool the heat of an excited intellect, and divert the anxious spirit from its perplexity and care; it should bring "corn from the sheaves of science," honey from the dark old wood, and grains of pure gold from the troubled waters.

We should read, that we may store our minds with the truths others have labored to reveal. We should read, that we may stimulate and strengthen our intellectual powers. We should read, that we may communicate knowledge, and thus do good to others. We should read, for the pure pleasure it affords ourselves, for, in the acquisition of knowledge, we may be miserly without fear or reproach. Let none say they have no time to read. Every one can redeem time, especially in the winter evenings, for a solace so sweet, in the daily, toiling, treadmill life we lead.

> "Oh! what were life but a blank? what were death but a terror?
> What were man but a burden to himself? what were mind but a misery?"

without the help, the comfort, the friends, the treasures,—found in books! Efforts should therefore now be made to establish good School Libraries for the winter months.

VI. Miscellaneous.

1. CHILDREN.

Come to me, O ye children!
For I hear you at your play,
And the questions that perplexed me
Have vanished quite away.

Yes, open the eastern windows,
That looked toward the sun,
Where thoughts are singing swallows,
And the brooks of morning run.

In your hearts are the birds and sunshine,
In your thoughts the brooklets flow,
But in mine is the wind of Autumn
And the first fall of the snow.

Ah! what would the earth be to us
If the children were no more?
We should dread the light behind us
Worse than the dark before.

What the leaves are to the forest
With light and air for food,
Ere the sweet and tender juices,
Have been hardened into wood,

Such to the world are children;
Through them it feels the glow
Of a brighter and sunnier climate
That reaches the trunks below.

Come to me, O ye children!
And whisper in my ear
What the birds and the winds are singing
In your sunny atmosphere.

For what are our contrivings,
And the wisdom of our books,
When compared with your caresses,
And the gladness of your looks.

You are better than all the ballads
That ever were sung or said;
For ye are living poems,
And all the past are dead!

2. THE BEAUTIFUL EYES OF CHILDREN.

A child's eyes—those clear wells of undefiled thought—what on earth can be more beautiful? Full of hope, love, curiosity, they meet your own. In prayer, how earnest; in joy, how sparkling; in sympathy, how tender. The man who never tries the companionship of a little child has carelessly passed by one of the great pleasures of life as one passes by a rare flower without plucking it or knowing its value.—*Mary Howitt.*

3. BLESSED CHILDREN.

As Mr. Andrew Freeman came up to the door of his elegant home a little before sundown, one pleasant Autumn day, he saw a coarsely dressed child, some seven or eight years old, sitting upon the door-step, with a basket by her side containing some chips gathered at a carpenter's shop.—Wearied with her heavy load, she had stopped to rest herself.

Something had gone wrong with Mr. Freeman, and he did not feel in a pleasant humor. The sight of the child and her basket, both occupying the white marble steps that led up to his handsome dwelling, annoyed him. They looked out of place, were incongruous, and blurred the fair entrance to his home.

"Get away from here!" he said, roughly, as he came up to the dooorway.

The child started, looked frightened, and taking up her basket, went hurriedly down the street.

"The little vagrants!" ejaculated Mr. Freeman, as he swung open the door of his luxurious home. "They shouldn't be permitted to prowl the streets in this way, watching around gates and doorways for a good chance to steal. If I had my will of them, every one of them should be taken up and sent to the workhouse."

If elegance and comfort at home could make a man happy, then was Mr. Freeman one of earth's favored ones. But the heart makes its own paradise. The mere externals of a man's life have far less to do with his happiness than most of us try to believe. On every side, beauty, elegance, taste and comfort met the eyes of Mr. Freeman, but they had no power to dispel the shadows that a troubled contact with men and business had drawn around his spirit.

"Who were you speaking to at the door?" asked his wife, as she met him in the passage.

"A dirty little vagrant!" he replied, "who was hanging about our doorstep with her greasy basket."

Mrs. Freeman did not reply. She had looked from one of the parlor windows a short time before, and noticed a very little girl with a basket of chips too large and heavy for one of her strength, almost dragging instead of carrying it along. And she had also seen her stop, and sit down to rest on their doorstep. Pity was in her heart for the child, who was poorly clad, yet clean. In her plain face was a gentle expression, which she knew was only born of a loving heart. Mrs. Freeman sighed as she thought that this was the child just driven off with angry words by her unreflecting husband.

"Where is Grace?" asked Mr. Freeman, on going from the parlor into the sitting-room.

"Fanny took her out walking," replied Mrs. Freeman. "But they will be home soon. I am looking for their return every moment."

Mr. Freeman was disappointed at not seeing his little pet, and this only increased the ill-nature from which he was suffering as a disease. He sat down, in a moody state of state of mind, and replied only in monosyllables to the various remarks of his wife. He did not speak unkindly to her, for that was something of which he had never been guilty. But he took no interest in what she said, and she failed entirely in her efforts to throw a sunbeam into his mind.

Presently the bell was heard to ring. Mr. Freeman raised his head and listened. A few moments elapsed—then the door was opened, and a voice, musical as a wind-harp to the ears of Mr. Freeman, came ringing along the passages. It was Grace, his darling child—the sunbeam in his dwelling.

"Has Papa come home?" he heard her ask.

"Yes, love," he called to her, "Papa is at home. Come up here, you little runaway!"

How changed, suddenly, were both tone and manner. Up the stairs bounded the fairy-footed child, and was soon in her father's arms, clasping his neck, and covering his face with kisses. Away went the evil spirit from the heart of Mr. Freeman; away went the shadows from his brow, banished by the presence of his blessed child.

Not very far from the rich man's dwelling, stood an humble frame tenement, where a poor day laborer lived with his wife and child. He had been very hard at work from the rising to the going down of the sun, and now released from toil, was slowly wending his way homeward, bearing the spirit of discontent in his heart. Though scarcely numbering as many years as Mr. Freeman, he looked older than the wealthy merchant. His skin was coarse and brown from long exposure to the summer's sun and winter's cold; his body stooping from the weight of many burdens; his large hands rough and horny from labor. Occasionally, as his eyes glanced up from the pavement, and rested upon the elegant home that stood proudly along the street, a touch of envy chafed him, and the old thought of a partial distribution of God's blessings came like a spirit of evil into his mind.

In this unhappy mood was John Grant when he laid his hand upon the latch, and pushed open the door of his poor abode. How different was this tenement, in all its surroundings and interior appearances from the princely dwelling of Andrew Freeman, the wealthy merchant. The low, weather-stained door, from which all paint had been obliterated for years, opened into the one room which was used as a kitchen, work room, eating and sitting room. The badly constructed chimney only partially carried off the smoke, and as John Grant stepped into the room he encountered an atmosphere loaded with a stifling and blinding vapor.

He neither scolded nor complained; but the sense of oppression was increased. He looked at his weary wife, and the weary wife looked at her weary husband. Both sighed, but neither of them spoke a word; yet both felt that their lot in life was a hard one. John Grant sat down, heavily, and his wife went on with her preparations for supper.

"Where is Mary?" he asked.

"She's gone to the store for salt," replied the wife.

The poor laboring man had looked up with a gleam of interest upon his countenance. His head bent slowly down again until his chin rested upon his bosom.

"Isn't she staying a great while?" said the father, looking towards his wife, after a few minutes had passed.

"It's time she was here," replied the mother.—"She'll be back in a moment."

"She's a great deal of help to you now, Jane," said Grant with an awakening interest in his voice.

"Oh yes, a great deal," answered his wife.—"You don't know how many steps she saves me. I hardly ever have to run to the store now. She buys things there just like a little woman. And she is learning to sew right neatly. Just look at that." And the mother brought a dingy old piece of unbleached muslin, on which were several rows of stitches. "Mary did the whole of this.—Now isn't it wonderful! She'll make a smart woman, I can tell you."

"And she's so good," said Grant, as a broad smile went over his rough face, lighting it up with a humane expression that gave it a higher type of manhood.

"Look there," added the wife, pointing to a basket of carpenter's chips, "she brought that from the shop all herself. Why its a load for a stout boy! Isn't she strong?"

"Too heavy a load for her arm, Jane," replied Grant, "You musn't let her bring such a large one again."

"Oh, she didn't mind it," said the mother. "I asked her how she got along, and she told me she carried the basket a short distance at a time, resting on the doorsteps, and so making her way homewards. I didn't just like one thing," added Mrs. Grant, in a voice betraying some indignation; "she says that a gentleman who lives in one of the great houses in the next block drove her off of his steps where she was resting, and frightened her with his angry looks."

"Confound him!" exclaimed John Grant, a fiery indignation burning instantly in his face.

"Don't, don't, John!" said his wife, in a soothing voice. "He didn't know our little Mary as we know her, or he never would have driven her away. There are idle, bad, thieving children about, John, and the gentleman, no doubt, took her for one of them."

"I don't care for that!" replied Grant, still in an angry tone. "But, if I had been there, I would have knocked him down, as I would knock down a dog!"

John Grant was still brooding over this treatment of his child, when the music of her happy voice, as she came singing to the door, fell pleasantly upon his ears, scattering all clouds and shadows, and filling his heart with sunshine.

"Has father come home?"

These were her words, as she threw open the door, and bounded into the room.

"Yes, pet, father is home," said John Grant, reaching out his arms towards the child, who was as precious to his heart as the child of any father in the land; that of Andrew Freeman not excepted.

Mary sprang into those great, strong arms, clasping her own, that were fairy-like in comparison, about her father's neck, and pressing her soft young lips lovingly to lips whose kisses were sweet to her. Then she laid herself down in his arms, and looked up, with a happy smile into his face. Mary was not a handsome child. Her features were plain, and rather course; but in the sight of her father she was very beautiful. To him, all the sweetness of her child-life, which was full of love for her parents, was expressed in her outward form. The blue of her eyes, the ruby of her lips, the chesnut brown of her hair, the softness of her skin, all had a refinement, a delicacy, and a beauty to him, as real as any of the higher types of beauty to others. In all her movements, too, he saw a surpassing grace.

Is not love the great beautifier? Is it not the heart's sunshine that makes light in all the chambers of the soul?

Blessed children! To the rich repiner, and the poor murmurer, alike blessings. Heaven-sent messengers of love! links that bind us to the upper world! Celestial visitants! To the Andrew Freemans and John Grants of this unhappy world alike, the good angels, who, by a single wave of the hand, sweep aside the dark curtains of brooding discontent, and let in the heavenly sunshine. Blessings on them! Blessings for ever!—*Arthur's Home Magazine.*

VII. Educational Intelligence.

CANADA.

—— UPPER CANADA COLLEGE.—From a circular just issued, we learn that in the eight Forms into which the College is divided, the pupils, besides being thoroughly grounded in Classics and Mathematics, receive progressive lessons in French, Natural Philosophy, Physical Geography, English Literature, History, Composition, Elocution and Reading, Arithmetic, Geography, Book-keeping, Writing, &c. The lowest of these eight Forms is the *Preparatory*, into which boys generally enter at the age of

eight or nine years. The instruction in this Form is only so far Classical as the rudiments of Latin are concerned, more than two-thirds of the time being devoted to the elements of an English education. In the *First*, or next higher Form, a little more time is given to Latin; and in the *Second*, the elements of Greek and of Algebra are commenced. In the *Third*, and the forms above it, Classics and Mathematics are gradually brought into more and more prominence, while the branches constituting an English education are advanced with equally careful precision. In the *Fifth*, *Sixth* and *Seventh* Forms German forms a part of the regular course.—*Brockville Recorder.*

——University of Toronto.—At the recent examination the following, Scholarships were awarded in the various departments: Faculty of Arts, Greek and Latin, (with History).—Wright; do Mathematics, 1 Lafferty; do 2 Frisby; General Proficiency, 1 Ledyard; do 2 Gibson; do 3 Thompson, W.; Faculty of Medicine, Kilpatrick; Department of Civil Engineering, Gaviller; Department of Agriculture, Forneri.—*Leader.*

—— Knox's College.—At the recent opening of the session of 1859-60 the company which assembled was very large, as upon these occasions it generally is. The Professors attended in their robes of office. The chair was occupied by Rev. Dr. Willis, President of the College. Proceedings having been commenced by prayer and the singing of a hymn, Professor Young delivered the opening lecture, in which he ably discussed and severely criticised the views of Dr. Mansell, as contained in his recent Brampton lectures on "The limits of religious thought." He was followed by the Chairman, who congratulated the students upon their return, after the recess, under very encouraging circumstances. On their behalf, he also thanked the ladies for the successful efforts they had made to render the College more comfortable to its inmates. The Rev. Dr. Burns then engaged in prayer, and the benediction having been pronounced, the proceedings were terminated. It may be remarked, that during the past year seventeen students have been ordained, and that their places will be filled by others who are desirous of being educated for the mininstry of the Presbyterian Church.—*Globe.*

—— Kingston Grammar School.—On Monday, the 19th ult., a few gentlemen, natives of Kingston, formerly pupils at the County Grammar School, presented W. J. Irwin, Esq., A.M., (for the last ten years master of the school) with an elegant snuff-box, accompanied by a complimentary address.

—— The Courts and the Common Schools.—On the 22nd ult., the Grand Jury of the Quarter Sessions in their presentment to Judge Harrison "urge upon all parents and guardians the great desirableness of giving to each child in Canada that amount of Common School education which will, at least, fit them for the duties of life, and teach them the great principle of 'doing unto others as they wish to be done to.' For we are of opinion that had those four boys, whom your honor justly sentenced to serve three years in the Provincial Penitentiary on account of their crime, been sent regularly to school, and had that parental control exercised over them which is absolutely necessary, they never would have been convicted, so early in life (if at all) of the heinous crimes of larceny and burglary. We, therefore, suggest the opening of our Common Schools to the children of all as Free Schools, so that no one can be found to complain of their want preventing them from giving the blessings of education to their offspring."

The Hon. Chief Justice Draper in his charge at the present Assizes, stated that he would leave to the Grand Jury "to consider whether they could make any suggestion whereby education would be made a duty, not simply a boon to society. They all must be painfully alive to the fact that although we have numerous common schools, our streets were nevertheless filled with children who did not take advantage of them; and whether any measures could be resorted to by which children could be prevented from wandering about as common vagabonds, a pest to society, and placed under control, was a question well worthy of careful consideration."

—— Colborne Teachers' Association.—"A Member" writes to state that this association, with 40 members, has been in successful operation for a year, and that its average attendance is about 25. Meetings are held on the first Saturday of each month, from 10 to 4 o'clock, in the new Grammar School building. From 10 to 3½ o'clock is faithfully devoted to the various classes which have been formed, and the last half hour to general business. E. Scarlett, Esq., Local Superintendent, is usually in attendance. The example of the association is respectfully urged upon other teachers.

—— To Correspondents.—The anonymous communications from Streetsville and Pakenham School Section No. 2, can receive no attention. That from Streetsville is scarcely suitable for the *Journal of Education*.—Ed.

BRITISH AND FOREIGN.

—— Edinburgh University.—The town Council of Edinburgh has unanimously elected Sir David Brewster to the Vacant Principalship of Edinburgh University. If Sir David accepts, this will create a vacancy in the Principalship of St. Andrew's University.

—— Harrow School.—Rev. Dr. Vaughan has resigned the head mastership of this school after fifteen years service.

—— Visit of the Lord Lieutenant to the National Schools, Dublin.—The Lord Lieutanant, accompanied by Mr. Cardwell, Solicitor-General of Ireland, and by the Hon. Mr. Ellis, M.P., lately visited the National Schools, Marlborough-street. His Excellency first visited the infant school, in which 300 children were present. The children received his Excellency by singing the National Anthem, and two other hymns. They were examined by Mr. Young in elementary arithmetic and geography. From the infant school his Excellency proceeded to the boys' school, containing about 440 boys. Here the classes were all in operation. The boys sang several of Hullah's songs, and "The meeting of the waters." Entering a class-room, a class of sixty boys was carefully examined in algebra, and compound proportion, in their acquaintance with the steam-engine, theoretically and practically; in geography and scripture History. In the girls' school there were fully 400 girls of all ages. They sang with marked sweetness and taste several of Hullah's songs, and at the close, "Lord dismiss us with Thy blessing." At the close of the inspection, the Vice-regal party examined various specimens of the pupils' work. His Excellency arrived at the institution at twelve o'clock, and remained until a quarter to two. On his departure, he was greeted with hearty cheers from the children, who were drawn up in three lines, according to age, on the lawn. Mr. Cardwell seemed to enjoy the warmth and heartiness of this unexpected greeting.

UNITED STATES.

—— The American College at Rome is rapidly progressing. The Bishops of the United States, who are about fifty in number, have recently sent thirty thousand dollars to the Pope for the necessary works: and before the end of the year the College will be able to receive one hundred students.

——Wm. and Mary's College. The new building for William and Mary College, at Williamsburg, Va., now in process of construction, to replace the venerable pile destroyed by fire last Winter, will be completed by the close of the present month. The architectural style and general convenience of the building have been greatly modernized and improved as compared with the old structure.

VIII. Literary and Scientific Intelligence.

—— Narratives of the Jesuit Fathers.—Last year the French reading part of the Canadian people were edified and delighted by the publication of the original narratives of the Jesuit Fathers. The narratives now sought to be presented to the public are of great value to all classes. The ethnologist will find in them faithful descriptions of a race now much degenerated and rapidly approaching to extinction, written amongst them as they lived and moved, hunted and fought, married and died, received baptism or ferociously murdered the men who sought to bestow it on them. Ordinary readers, from the intelligent scholar to the untaught peasant, will peruse with interest an account of men who trod the soil on which they now move,—who were the lords of the forest and the river, now smiling with the rich harvest or glittering with the vessels of commerce,—and will learn with some emotion that they live and sleep in security on the self-same spot which has been often drenched with the blood shed in warfare or massacre. The publication of so voluminous a work will depend entirely upon the support received from the public. The first volume has been translated by one of the best translators in the Province; and it will be put to press by the publisher, John Lovell, Esq., of Montreal, as soon as a sufficient number of subscribers is obtained to defray the cost of translation and publishing. The work will make 3 Volumes, Royal 8vo., of about 750 pages each, in Long Primer type. Subscription lists will be found at the Book-stores in the various Cities, and at the Offices of the Publisher, in St. Nicholas Street, Montreal, and Ste. Anne Street, Quebec; also at Lovell and Gibson's, Toronto. Price in paper covers per volume, $2.75, or for the set, $8.25. Price in half calf per volume, $3,50, or for the set, $10.50.

—— NEW HISTORY OF CANADA.—It is intended to publish, by subscription, a New History of Canada (founded on that of Mr. F. X. Garneau), as soon as a sufficient number of Subscribers can be obtained. The recent appearance of a third and much improved edition of *l'Histoire du Canada*, by Mr. Garneau, has given rise to a wish, expressed to Mr. Lovell by several of his friends and commercial connections, that he would undertake to publish a counterpart, in English, of the above work—the best Canadian History extant—with such modifications as would make it acceptable to the entirety of our people, whether of British or French origin. Accordingly, responding to the desire thus expressed, Mr. Lovell has engaged the services of Mr. Andrew Bell—a gentleman of great literary experience—as translator, compiler, and editor of what he proposes to entitle "The New and Comprehensive History of Canada," from the foundation of the Colony till the year 1840,—to be based on the third and latest edition of *l'Histoire du Canada* of Mr. Garneau. Furthermore, Mr. Lovell having made application to the latter for his sanction to the proposed work, is happy to say that his special approbation has been obtained; so that the translation of his labours now proposed (with modifications and additions, as aforesaid,) becomes the only authorised reproduction of the French version of the work. It is proposed that the "Comprehensive History of Canada," shall form three handsome volumes, in demy octavo, and be printed in a superior style, on paper of the best quality. Each volume will comprise from 400 to 500 pages. Price $1.50, or $4.50 for the whole. It is hoped that the Publisher may be enabled to bring out the work, complete, early in the Fall of 1860, Subscription Lists will be found at the Bookstores.

—— GEOLOGICAL MAP OF CANADA.—A Canadian correspondent of the Portland *Advertiser* states, that Sir Wm. Logan's new geological map of the British Provinces is far advanced towards completion. It extends North to James' Bay, or the South point of Hudson's Bay: East to include Newfoundland; South to embrace the Pennsylvania coal field to the mouth of the Delaware River, and West to include the Red River of the North.

—— SALE OF "HOUSEHOLD WORDS."—The copyright, stereotype-plates, and stock of this valuable periodical were recently sold by auction in London. The stock consisted of 620,000 Nos., either parts, numbers, or volumes. The bidding was commenced at £500 by Mr. Maxwell, and was continued by Messrs. Kent, Chapman and Hall, and Bradbury and Evans, and the property was finally knocked down to Mr. Arthur Smith's bidding at £3,500.

—— EGYPTIAN REMAINS IN CANADA.—By the obliging attention of the Hon. James Ferrier, who, with a portion of his family, visited Egypt last winter, we had, a few days ago, the pleasure of inspecting a somewhat extensive and most interesting collection of relics brought by him from the land of the Pharoahs. Mr. Ferrier, with that thoughtful and considerate liberality for which he has long been known to his fellow-citizens, has presented the whole of his costly collection to the Natural History Society of this city, and we understand they will, ere' long, afford the subject for a lecture on Egyptian Antiquities by a learned Professor in McGill College. Among the specimens brought by Mr. Ferrier are to be found mummies—human and of the lower animals—in a perfect state of preservation, with a great variety of hideous little Egyptian *godlings*, lamps, beads, seeds, figures of sacred beetles, winged and unwinged, bulls, hawks, ibises, &c.—*Montreal Herald.*

—— FREE ART GALLERY IN WASHINGTON.—Mr. Corcoran, of Washington, is erecting on Pennsylvania Avenue an Art Gallery, which is estimated to cost some two hundred thousand dollars. The gallery will be free, and will be managed by trustees appointed by Mr. Corcoran.

IX. Departmental Notices.

POSTAGE REGULATION IN REGARD TO GRAMMAR AND COMMON SCHOOL RETURNS.

All official returns which are required by law to be forwarded to the Chief Superintendent, or a Local Superintendent, and which are made upon the printed blank forms furnished by the Educational Department, *must be pre-paid*, at the rate of one cent per oz. *and be open at each end*, so as to entitle them to pass through the post as printed papers. No letters should be enclosed with such returns.

PRE-PAYMENT OF POSTAGE ON BOOKS.

According to the new Postage Law, the postage on all books, printed circulars, &c., sent through the post *must be pre-paid by the sender*, at the rate of one cent per ounce. Local Superintendents and teachers ordering books from the Educational Depository, will, therefore, please send such an additional sum for the payment of this postage, at the rate specified, as may be necessary.

PUBLIC SCHOOL LIBRARIES.

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

The Chief Superintendent of Education is prepared to apportion *one hundred per cent.* upon all sums which shall be raised from local sources by Municipal Councils and School Corporations, for the establishment or increase of Public Libraries in Upper Canada, under the regulations provided according to law. Prison Libraries, and Teachers' County Association Libraries, may, under these regulations, be established by County Councils, as branch libraries.

PRIZES IN SCHOOLS.

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

SCHOOL REGISTERS.

School Registers are supplied gratuitously, from the Department, to Common and Separate School Trustees in Cities, Towns, Villages, and Townships by the County Clerk—through the local Superintendents. Application should therefore be made direct to the local Superintendents for them, and not to the Department. Those for Grammar Schools will be sent direct to the head Masters, upon application to the Department.

PENSIONS.—SPECIAL NOTICE TO TEACHERS.

Public notice is hereby given to all Teachers of Common Schools in Upper Canada who may wish to avail themselves at any future time of the advantages of the Superannuated Common School Teachers' Fund, that it will be necessary for them to transmit to the Chief Superintendent without delay, if they have not already done so, their annual subscription of $4, commencing with 1854. The law authorizing the establishment of this fund provides, "*that no teacher shall be entitled to share in the said fund who shall not contribute to such fund at least at the rate of one pound per annum.*"

LIST OF TEACHERS Licensed by the County Board of Public Instruction, for the County of York, 17th August, 1859. (Published by order of the Board.)

EXAMINED AT THE CITY OF TORONTO.

First Class.—Sarah M. Hamilton.

Second Class.—Samuel McCollough, Sydney Smith, Robert Wardon, Wm. Bryant, Jas. Poole, Janet Bain, Adelaine Coady, Magdalena Phillips, Mary Patterson, Charlotte Fraser, Alexander Best, William Richardson, Jane A. Banan.

Third Class.—Elizabeth Barker, Caroline Fraser, Gilbert Gilmour.

AT RICHMOND HILL.

First Class, A.—John M. Graham. *B.* Thos. D. Keffer.

Second Class, A.—Robert Fleming, Parmenius Switzer, John Milne, William Burgess, Fletcher Dyer, Duncan McMurchy, H. W. Bolitho, Thos. Irwin, Thaddeus O'Reilly, John Hand, Henry White, Elizabeth Lowrie, Mary Wiley. *B.* William James, Henry Hand, John McCaffrey.

Third Class.—William Lundy, William Fleming, Frank Wootton, James P. Clarke.

AT NEWMARKET.

First Class, B.—Henry Taylor, Anostatius Bache.

Second Class.—Frederick Burrows, David Rogers, William Tomline, Caroline Lennon, Mary McGuiness, Elizabeth McGuiness.

JOHN JENNINGS, D. D.,
Toronto, 1st Oct., 1859. Chairman.

TORONTO: Printed by LOVELL & GIBSON, *corner of Yonge and Melinda Streets.*