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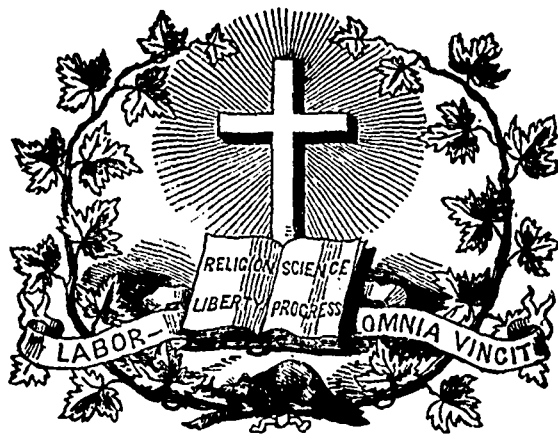
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JOURNAL OF EDUCATION.

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SUMMARY.—**EDUCATION:** The Colleges of Canada.—The Laval University, by Hon. Pierre Chauveau. (concluded.)—The Penitent Scholar.—Rules for Home Education.—Grammar.—Notes of a lesson on arithmetic.—Notes of a lesson on Natural History.—**LITERATURE:** Poetry: Nothing to Wear.—**SCIENCE:** Notes on Canadian Butterflies.—**OFFICIAL NOTICES:** Annexation to School Municipality.—Fees allowed for copies furnished by Department.—Appointments.—Appointments of School Commissioners.—Notice to School Commissioners.—**EDITORIAL:** American Association for the advancement of Science, (continued).—**MONTHLY SUMMARY:** Educational Intelligence.—Literary Intelligence.—Scientific Intelligence.—Artistical Intelligence.—Statement of monies paid by the Education Office fr. n 1st January to 31st October 1857.—**WOOD CUTS:** Illustrations of Canadian Butterflies.

EDUCATION.

THE COLLEGES OF CANADA.

I.

The Laval University.

(Concluded from our last.)

The faculty of law, was next organized. The Honorable A. N. Morin, for a number of years one of the leading politicians in Lower Canada, and now a Judge of the Superior Court, was appointed Dean of the faculty, and took the chair of natural, public and international law. Mr. Morin had been one of the leading members of the House of Assembly of Lower Canada, and he and Mr. Lafontaine were recognised as Mr. Papineau's greatest and most able supporters. His talent as a political and constitutional writer, was of the highest order, and his integrity and patriotism were never doubted or called in question even by the most violent of his political opponents. He was sent to England as bearer of the petitions based on the famous 92 resolutions, in 1834. During the troubles, he was obliged to conceal himself, and was subsequently elected a member of the new parliament after the Union.

During his political career, he represented not less than five different constituencies. He was appointed a Judge of the Circuit Court in 1842, but he resigned his seat on that bench, the next year, for the purpose of entering the

Baldwin-Lafontaine cabinet, as commissioner of crown lands.

After the resignation of the ministry, on the constitutional questions at issue between Lord Metcalf and his advisers, Mr. Morin went over to the opposition benches, was nominated by the party he was acting with, speaker, but was defeated by Sir Allan McNab, the government candidate, by a majority of two votes: Sir Allan MacNab having however, resigned the chair, towards the end of that parliament, Mr. Morin was nominated by the same government which had opposed him, and he was unanimously elected. He was again elected speaker under the second Lafontaine-Baldwin cabinet, and was sent for, with Mr. Hincks to form a new government, on the resignation of Mr. Lafontaine in 1851. After the resignation of the Hincks-Morin ministry in 1854, he formed a coalition cabinet with Sir Allan MacNab. A short time afterwards, he announced his intention of retiring from public life, and it was even surmised that he would devote the whole of his time to a professorship in the Laval University. This would have happened, so great his modesty and self denial, had not some of his colleagues in the government almost forced upon him the judgeship which had become vacant by the death of Judge Philippe Panet. Mr. Morin was born at Saint Michel, in the county of Bellechasse, in October 1803, and is now therefore 54 years of age. His career as a public man has been one of the longest and most brilliant in this country, but it has not prevented him from devoting a great part of his time to the study of several foreign languages, to that of the civil law, (few lawyers having a greater knowledge of the Roman jurisconsults), and to science generally.

His presence at the head of one of the faculties in the Laval University adds lustre and undoubted popularity to this institution. The other professors of the faculty of law are also men of high standing in the country.

Jacques Cremazie, Esquire, advocate, author of a remarkably well digested work on the criminal laws, of the *notions utiles*, a popular treatise on jurisprudence, and of several

educational works, fills the chair of civil law. The Honorable Judge Badgley, who has been a member of the provincial government, and Attorney General for Lower Canada, and who has also distinguished himself by the compilation of a code of the criminal laws of this province, fills the chair of criminal jurisprudence, but we fear that his removal from Quebec to Montreal will prevent his retaining that office. Jean Thomas Taschereau, Esquire, is entrusted with the teaching of commercial law, and Ulric Tessier, Esquire, formerly a member of parliament, and mayor of the city of Quebec holds the chair of *procédure civile*.

Mr. Aubry, a doctor of laws of the University of France, has commenced a course of lectures on Roman Jurisprudence, which is attended not only by the students of the University, but also by many members of the bar, and other gentlemen.

The faculty of arts is now being organised, and Mr. Ferland, formerly principal of the college of Nicolet, and who proceeded to Europe for the express purpose of making researches relative to the early history of Canada, and of visiting the Universities in the Old Countries, has been appointed professor of history. W. Sterry Hunt, chemist to the Canadian Geological department, has received the appointment of professor of chemistry, and has lectured as such, with great success. Three young gentlemen, pupils of the seminary are now studying at the *École des Carmes*, in Paris, with the view of preparing themselves for professorships in the faculty of arts.

Nothing has been done yet towards the organisation of the Faculty of Theology, except that the Reverend Mr. Taschereau who, it is probable, will be named Dean of the Faculty, has spent a year in Europe and has obtained the degree of Doctor in Canon Law in the University *Del la Sapienza* at Rome.

The ceremony of the inauguration of the Laval University took place at Quebec together with the laying of the corner-stone of the main building, on the twenty first of September 1854. High mass was celebrated in the cathedral by the Archbishop, pontifically, assisted by six Bishops. The members of both houses of parliament, of the Quebec bar, and the professors of the University, were present in full costume. A choir of about one hundred and fifty singers, under the direction of Mr. Dessane, added to the solemnity of the ceremony, and the sermon was preached by Monseigneur de Charbonnel, Bishop of Toronto. The clergy and assistants after mass, formed a procession from the Cathedral to the place where the stone was to be laid, and after the ceremony proceeded to the vast centre yard of the seminary, where they were met by His Excellency the Governor General, and suite. The inaugural address was then delivered by the Visitor, who was followed by His Excellency, who spoke in french, at great length, with the greatest fluency and elegance, and in his usual happy style and brilliancy of language. The Rector and the Honorable Mr. Morin, also, addressed the meeting, which comprised a very large proportion of the catholic clergy of Canada, several Bishops and priests from the United States, the

elite of the society of Quebec, of all creeds and origins, and a vast crowd of people.

The erection of the building was then most vigorously proceeded with, and it is now complete. It is 296 feet in front, by 50 feet in depth, and 80 feet in height: it is divided into three great divisions, the centre one of which, about sixty feet front, projects about three feet, and contains the offices of the Moderator and of the secretary, the lecture rooms of the professors of physical sciences and belles lettres, and the reading rooms in connection with the libraries.

A large portion of this centre division is taken up by the great central stair case. The right wing contains, two laboratories, one for the professors, the other for the students, a suite of rooms for the professors of chemistry, a cabinet of philosophical apparatus, separate rooms for each of the large collections of zoology, entomology, geology and mineralogy now in progress, and separate libraries for the faculties of theology, of literature and of medicine.

The left wing contains one great reception room, another, which is to be the council room, four large lecture rooms, one for law, another for divinity, and the two others, for supplementary courses; also numerous retiring rooms for professors, committees and boards of examiners. The third and fourth stories of that wing are thrown into one large room, the convocation hall, with a gallery supported by cast iron pillars, and is elegantly decorated.

The boarding house or *pensionnat* is on the same level as the main building, but at some distance from it, in University street nearly facing the school of medicine. Like the University it is five stories high, although only sixty feet in height. It measures one hundred and ten feet in front by forty feet in depth; it contains large halls and refectories with accommodation for fifty students, each having two private rooms to himself.

All these edifices are substantially built of beautiful cut stone, and although not much seen from the city on account of their position on narrow streets, they are commanding objects, when seen from the river. It is to be regretted that the main building should be so plain and destitute of architectural ornament, although its proportions are faultless and not without some pretensions to elegance and taste.

The walk on the roof affords a most extensive and beautiful coup d'œil surpassing even the one from the Durham terrace or platform erected on the ruins of the old château St. Louis.

It embraces all the luxuriant and romantic scenery, for miles in extent, of the magnificent and productive valley through which flows the river St. Charles,—the St. Lawrence as far down as Cape Tourmente, the island of Orleans, the pretty villages of Charlebourg and Beauport, with the numerous villas and country residences on the one hand,—and Point Levi on the other,—the immense extent of view being only bounded by high chains of mountains rising one above another in the rear. Well has the prophetic description of Quebec given by the historian Charlevoix in 1720, in his letter to the Duchesse de Lesdiguières, which we have quoted at the outset, been fulfilled. In fact, one

would almost imagine that his description had been written by a visitor to Quebec, at the present day.

It is nevertheless deeply to be regretted that the University Council should have crowded all these fine buildings within so narrow a space, and in a place where they are almost out of the sight of strangers visiting the town, and lack the ground required for the embellishment now added to all educational institutions, in the way of gardens, parks, and shrubberies, and have even suffered in their architectural structure, in consequence of the site selected. Had the University been built on the farm of Maizerets, at La Canardière, or even, if this spot were deemed too remote from town, (which it will not be in the course of time, when Quebec shall extend on the north side of the river St. Charles, until Beauport itself becomes one of its suburbs,) a piece of ground might have been purchased on the St. Louis or St. Foy road, where much more handsome and much more convenient buildings could have been erected, and where the students would have found in the various amusements that could have been procured for them, some compensation for the rigid but salutary regulations of the boarding-house. It is true that many powerful reasons were alleged against such a plan, in contemplation for some time;—and among other motives which induced the Council of the University to decide against it, was the importance of placing the new buildings in the immediate neighborhood of the grand and minor seminaries, many gentlemen being, as a matter of necessity, connected with the three departments. Another reason, the weight of which must be seen at once, was a desire that not only the students, but also the people of the town generally, should benefit by the public lectures, and by an easy access to the collections in the museums and libraries.

While therefore many persons will view in the selection of the site, a sad and irretrievable error, we must admit that the Rector and Council of the University were placed in a difficult position in that respect, more especially, if the additional expense and difficulty of purchasing an extensive piece of land be taken into consideration. Whatever may be the opinion entertained on this point, no one will deny the energy and activity displayed by the able Rector and Council of the University in the framing and carrying out, the statutes of the Institution.

According to these statutes, the academical year is divided into three terms; the first, beginning on the first Tuesday in September and ending on Christmas Eve; the second, commencing at the Epiphany and finishing on the Wednesday preceding Easter; the third, beginning on the second Monday after Easter, and ending on the second Tuesday in July. After each term, the students are required to pass an examination.

The course of studies in each of the faculties of Theology, Law and Medicine occupies four years, and three years only, in the Faculty of Arts.

The lectures in the first three named faculties, are not generally open to the public; clergymen, however, are admitted to the course of Theology; lawyers to that of Law;

and physicians to the course of lectures of the Faculty of Medicine.

The Faculty of Arts gives two series of lectures the one public, and the other private. The time-table of lectures is so arranged, that the student may not have to attend more than four lectures in one day, in the faculty to which he belongs, and that he will be able to follow, if he choose, all the public courses of the Faculty of Arts. The attendance at the lectures on science in that faculty is obligatory on all students of medicine:—the students at law and in theology are required to attend the lectures on history and literature, and all students generally are required to attend the courses of moral and intellectual philosophy.

The students of the Faculty of Arts will attend all the public lectures of that Faculty, but the private courses being subdivided into literary and scientific series, they will be allowed the liberty of attending both, or of selecting either of the two courses.

None of the lectures are to take up less than one hour, or to exceed one hour and a half, in the delivery.

As far as practicable, all students must be provided with text books, which are to be commented upon and explained by the professor.

Each student must prepare an abstract of the lecture, for examination thereon at the next ensuing sitting.

After every series of five or six lectures, the professor will devote one of the sittings to a recapitulation of that series, to ascertain by some mode of examination, the progress made by the students respectively.

The matriculation is obtained from the Rector, must be enregistered by the Secretary, and must be renewed yearly. All students will be required regularly to fulfil their religious duties. The catholics will attend divine service at the parish church, and will also be required to attend any religious instruction specially intended for them by order of the Rector.

Blasphemy, irreligious or immoral language, any act which may disgrace the Institution, frequenting theatres, taverns, gambling houses, or houses of ill fame, will invariably be attended by expulsion. The students will not be allowed to frequent other reading-rooms or libraries than those of the University, neither will they be permitted to attend any association, or to participate in any public or collective demonstration without especial leave. They must reside in the boarding-house attached to the University, unless they reside with their parents or tutors.

The professors are required to notify the Moderator of all absences or irregularity of conduct.

The following penalties are imposed:—1st., private admonition; 2d., admonition in the presence of all the students of the Faculty; 3rd., suspension from the right of attending the lectures; 4th., dismissal for a limited period; 5th., dismissal for an unlimited period; 6th., *irretrievable* expulsion.

The suspension is pronounced by the Dean and Professors of the Faculty; it cannot exceed a week, and the student is confined to the boarding-house or to his domicile.

Dismissals and expulsion can be ordered only on judgment given by the Council of the Faculty with

the approbation of the Rector. In cases of unlimited dismissal or of expulsion, the student has a right of appeal to the Council of the University. The expulsion differs from dismissal in this particular, that the student who has been expelled, cannot be re-admitted. The students dismissed for a limited or unlimited time, are sent back to their families. An entry is made of every penalty incurred by the student opposite his name in the matriculation register.

There are three degrees in each Faculty—Baccalaureate, or degree of Bachelor, Mastership or Licence, and Doctorate. No one can obtain the second degree in any of the Faculties of Theology, of Law or of Medicine, without having obtained that of Bachelor of Arts.

There are three juries or boards of examiners for the granting of the baccalaureate. The members of those juries are appointed by the Rector from among the officers and professors of the several colleges in the Province. There are two examinations to be undergone before those boards of examiners; they are carried on in writing, and their nature and particulars are minutely described in the rules and regulations. The first examination comprises latin, greek, general history, history of Canada, literature, rhetoric, french and english composition. One of the examinations on history must be answered in the english language by students whose vernacular is french, and vice versa.

Candidates are warned that the examination on literature and rhetoric extends over a wider range than that of the text books in use in the colleges, and that in order to stand the trial, they will have to read and study books of a higher character. This first examination is conducted by the means of six different sittings, the three first of three hours each, the fourth and fifth of four hours, and the last of five hours duration. The six sittings of the second examination will occupy four hours each, except the last, which will only take two hours. In the three first the candidate holds dissertations on some points of logic, metaphysics, and ethics. In the three last he is examined on natural philosophy, chemistry, mathematics, astronomy and natural history.

The jurors will sum up the number of marks obtained by each candidate, and will report them under three different heads. The first class comprises those who have gained at least two-thirds of the total number of marks that can be given, the second, those who have carried at least one-third, and the last those who have not obtained as many. The candidates of the first class alone are entitled to the degree, those of the second class are allowed to attend the lectures of any of the faculties, but cannot obtain any degree until they shall have acquired by a subsequent examination that of Bachelor of Arts; and lastly, those of the third class are not allowed to follow the courses, until they have passed a more successful examination.

The Baccalaureate, or degree of Bachelor in the Faculties of Law and of Medicine can only be obtained after six terms and as many successful examinations. No layman can receive the degree of Bachelor of Divinity. Candidates must hold two dissertations in latin, one on a subject con-

nected with dogmatical, and the other, with moral theology; to which is added an examination during two hours, on sacred history, theology and ecclesiastical history.

Degrees in the Faculty of Arts can only be obtained after three years constant attendance, but it requires four years, in the three other Faculties. Three questions are submitted to the jurors: 1st. "Has the candidate answered in a satisfactory manner?" If this be answered in the negative, he is rejected. If in the affirmative, the next question is: "Has the candidate answered with distinction?" The second question being carried, the third is put in the following words: "Has the candidate answered with great distinction?" A mention of those answers is made in the licence. The examinations are partly oral and partly written.

The regulations for the conferring of a Doctorate have not yet been published. As yet, honorary degrees only have been granted, and they have been conferred on the professors themselves. There are now ten Bachelors of Arts, three of Medicine, one of Laws and one Licentiate in Medicine.

The number of students in the faculty of law at present is 22, and there are 25 in the Faculty of Medicine. With the 396 pupils in the grand and minor seminaries, it gives a grand total of 443 pupils.

The total number of professors, lecturers, and teachers in the University, and the two seminaries, is 42. The total number of volumes in all the libraries, is about 40,000, and it is still rapidly increasing. The value of all the collections and cabinets of natural philosophy is about £9,000 and these are also daily increasing; the University buildings cost over £50,000 and the total value of the buildings in town exclusive of those at Maizerets, and St. Joachim, is at least £80,000.

Such is an outline of the history, moral, literary and statistical of the oldest educational institution in Canada. That it has done an immensity of good in the Province, is apparent; that it will, under its new constitution, obtain results still more in keeping with the increasing importance of our country, is not to be doubted, from the ample provisions which it is now making for its efficiency in every department of science and literature.

The Seminary of Quebec, up to this time, has been little known out of the country, and has never aspired to the fame which other institutions on this continent are so ambitious to obtain. It has been content with remaining for a century the great feeder of Lower Canadian society and like the roots of the tree which are never seen, it has humbly performed functions essential to the existence of civilization. Now that the tree is attaining its entire development, now that the descendants of the handful of settlers who gathered round Mgr. de Laval have become a population of upwards of 800,000 souls; now that the immense diocese of that worthy pioneer of Christianity in North America is subdivided into two Ecclesiastical Provinces with fifteen Bishoprics without taking into account that vast portion of the United States territory which then belonged to France; now that twenty four colleges are flourishing in Lower

Canada, it is time to inquire into the source of our present moral and intellectual prosperity and to render homage to whom homage is due. Would to God that the task had fallen into hands more competent; but at any rate it could not have been left to one more desirous of doing it justice, or more delighted at the work itself, although it did bring to his mind the visions of by-gone days of happiness and the sad reflexions which are always inspired by the recollection of those dear mentors and fellow students who have departed, and whose fate reminds us but too forcibly of our own impending destiny. But such thoughts are wholesome, and not unpleasant after all. "There is a whole period in early life, says Alexandre Dumas, which glides away without even being crossed by one sad thought. The funeral knell which is constantly heard, falls powerless on our minds. Every voice that is heard, discourses sweet music to our ears, every whisper is like the humming and warbling of birds. The fact is that we are then ascending that lovely mountain of life so beautiful on one of its sides, so desolate on the other.

"Then hail to those first hours of melancholy awaiting us, when climbing to the summit, we reach the mid-way station of life, from whence our eye can embrace, on the one hand the gentle slope covered with flowers we have been ascending, and on the other the steep and waste descent which remains for the end of the journey. It is there, that you first catch, with the wintery breeze, the first echo from another life, the knell which tells you of the death of a mother, of a relative, of a friend.

"Then bid farewell to the genuine mirthfulness of life; the funeral knell will never cease—you will hear it perhaps once a year, then twice, then more frequently. You will be like a tree, which loses in the first summer storm, one of its leaves, and says to itself "What do I care for a leaf? There is such an abundance of them!" Then, storms will come in rapid succession, then the continuous gales of the fall, then the first frosts of winter, then the tree is bald, its branches are bare, and, a useless skeleton, it waits but the axe of the woodman.

But, after all, is it not by a kind permission from Heaven that we are visited by the gradual withdrawal of all who love us, and of all that are cherished by us? Is it not better, when we are stooping to the earth, that from the earth should rise the dear familiar voices of other days? Is it not refreshing, when fate is pushing us irresistibly faster and faster towards an unknown region, that we should be certain that we shall find there a world of *souvenirs* that have preceded, instead of following us!"

PIERRE J. O. CHAUVEAU.

The Penitent Scholar.

School is out. The last lesson has been recited and the evening hymn sung, and the shouts of merry voices are heard on the green. Their spirits overflow like long pent-up waters. But one of their number remains behind. All is quiet now in the school-room. There sits the teacher at her desk, with a sad and troubled look.

At one of the desks before her sits a boy, whose flushed countenance and flashing eye of a struggle within. His arms are proudly folded, as in defiance, and his lips are compressed. He will never say, "I'm sorry, will you forgive me?" No! not he. His breath comes thick and fast, and the angry flush upon his cheek grows a deep crimson. The door stands invitingly open. A few quick steps, and he can be beyond the reach of his teacher. Involuntarily his hand snatches up his cap, as she says, "George, come to me." A moment more and he has darted out, and is away down the lane. The teacher's face grows more sad; her head sinks upon the desk, and the tears will come, as she thinks of the return he is making for all her love and care for him.

The clock strikes five, and slowly putting on her bonnet and shawl, she prepares to go, when, looking out at the door, she sees the boy coming toward the school-house, now taking rapid steps forward, as though fearful his resolutions would fail him; then pausing, as if ashamed to be seen coming back. What has thus changed his purpose?

Breathless with haste, he has thrown himself down upon the green grass by the side of the creek, cooling his burning cheeks in the pure, sweet water; and as gradually the flush faded away, so in his heart died away the anger he felt toward his teacher.

The south wind, as it stole by, lifting the hair from his brow, seemed to whisper in his ear, "This way, little boy, this way," and voices within him murmured, "Go back, go back." He started to his feet. Should he heed those kind words—should he go back? *Could* he go? Ah! here was the struggle. Could he be man enough to conquer his pride and anger, and in true humility retrace his steps, and say "forgive?" *Could* he go back? As he repeated these words he said to himself, "I will go back;" and the victory was won. Soon, with downcast eye and throbbing heart, he stood before his teacher, acknowledging, in broken accents, his fault, and asking forgiveness.

The sunbeams streamed in through the open window, filling the room with golden light, but the sunlight in those hearts was brighter yet. Ah, children, if you would always have the sunlight in your hearts, never let the clouds of anger rise to dim your sky.

He was a hero. He conquered himself; and Solomon says, "He that ruleth his spirit, is better than he that taketh a city." At first he cowardly ran away; but his courage came again; he rallied his forces and took the city. Brave is the boy that has courage to do right, when his proud heart says I will not.—*New York Observer.*

Rules for Home Education.

The following rules we commend to all our patrons and friends, for their excellence, brevity, and practical utility. They are worthy of being printed in letters of gold, and of being placed in a conspicuous place in every household. It is lamentable to contemplate the mischief, misery and ruin which are the legitimate fruit of those deficiencies which are pointed out in the rules to which we have reference. Let every parent and guardian read, ponder and inwardly digest:—

1. From your children's earliest infancy, inculcate the necessity of instant obedience.
2. Unite firmness with gentleness. Let your children always understand that you mean what you say.
3. Never promise them anything unless you are quite sure you can give them what you say.
4. If you tell a child to do something, show him how to do it, and see that it is done.
5. Always punish your children for wilfully disobeying you, but never punish them in anger.
6. Never let them perceive that they vex you or make you lose your self-command.
7. If they give way to petulance or ill-temper, wait till they are calm, and then gently reason with them on the impropriety of their conduct.
8. Remember that a little present punishment, when occasion arises, is much more effectual than the threatening of a greater punishment should the fault be renewed.
9. Never give your children anything because they cry for it.
10. On no account allow them to do at one time what you have forbidden, under the same circumstances, at another.
11. Teach them that the only sure and easy way to appear good is to be good.
12. Accustom them to make their little recitals with perfect truth.
13. Never allow of tale-bearing.

14. Teach them self-denial, not self-indulgence, of an angry and resentful spirit.

If these rules are reduced to practice—daily practice—by parents and guardians, how much misery would be prevented, how many in danger of ruin would be saved, how largely would the happiness of a thousand domestic circles, be augmented. It is lamentable to see how extensive is paternal neglect, and to witness the bad and dreadful consequences in the ruin of thousands.

Grammar.

II.

To the cautions which in our last number we laid down in the teaching of grammar, we might have added the following:—

- (a.) The *idea* should be first given, and then the *definition*.
- (b.) *Technical* terms should be at first sparingly employed, and when used, thoroughly, explained and understood.

FIRST COURSE OF LESSONS.

The lessons should be given progressively; a general idea of the parts of speech should be given with few details, and if the children be very young, without any details whatever.

Attention must be paid to the order in which the parts of speech should be taken.

1. *The Noun* must be first explained as being the foundation and groundwork of every proposition. The names of *material* objects should be first selected, which the pupil can see or touch. He should produce them from his own observation, and enumerate by word of mouth, or by writing on a slate, the names of things which he has seen on the road to school, or at the breakfast table, or dinner table. A more advanced class may add a list from abstract subjects, things which they cannot see and yet talk about, as *goodness, virtue, &c.* Pupils should practise in writing out lists of nouns with similar terminations, ending in *en*, and *er, or, ess, &c.* Here enters the use of grammar in cultivating the habits of minute observation and classification. Children may be left in their class, or required at home to write out lists of nouns *common* and nouns *abstract*. This they may do either from their own observation or from their reading lesson books.

2. *The article* should come next in order, unless it be considered in the light of an adjective.

3. The next part of speech to be examined is the *adjective*. When a noun is perfectly understood as the name of any object that can be seen or spoken of, attention must be drawn to its qualities, and the words which describe these qualities are adjectives, whether we say *white chalk* is *white*. The words which are adjectives should be drawn from the children.

4. A *verb* comes next in natural order. The most ready method of explaining it is to put the question—*What nouns do?* Example—“Boys play;” “bird flies.”

At this stage the pupil must be made to perceive that a *noun* and a *verb* by themselves are capable of forming sentences. Each of the last examples conveys a complete sentiment.

5. An *adverb* follows the verb, and is found in answer to the question—*How actions are performed?* We must not descend yet to the different classifications of adverbs.

6. *Pronouns* come next in order. We must confine the attention to *personal* pronouns, and even omit distinction of persons; much more the inflexions, to denote varieties of case or number.

7. The *preposition* is the last part of speech that occurs in a simple sentence, and is the most difficult to explain, because it is the most abstract in its character. The points to be aimed at are to show that a preposition denotes, (1) the direction of the action of the verb with respect of the noun—“he sat on the chair.” (2) The relation of one object to another—“the book on the shelf.”

8. The *conjunction* might be omitted altogether till a later course, unless it be regarded as a link between two words, rather than of two sentences, which is its proper office—(Papers for the Schoolmaster.)

Notes of Lessons on Arithmetic.

NOTES OF A LESSON ON NOTATION AND NUMERATION.

I. NUMERATION.
METHOD.

Shew the children several articles of the same kind, as marbles, little blocks of wood, &c., and ask them to count them and to tell you the number. Now children you have counted them, how many are there? Seven, then seven is the number of the marbles.

Now if I asked you how many brothers you had, and you did not know any numbers how could you tell me? We could not tell you. Oh! but in some countries they know no numbers, and yet they can tell one another; try to think again. Teacher, I could hold up as many fingers and

tell you, or lay down as many marbles. Yes, and that is the way that people in very savage countries do, for though they have no marbles they use little stones which do as well. But this is very awkward, so it is better to have numbers, and be able to tell at once, and to tell numbers in words without using stones or anything else, is called numeration.

Now I have laid down six more besides the other seven, how many are there—thirteen, then seven and six are the same as—thirteen, or as three and ten, but instead of saying there are seven and six marbles, or three and ten marbles, we say there are thirteen marbles. Yes, and as I shall show you directly we always reckon numbers by tens or teens.

II. NOTATION.

METHOD.

Now, children, if you wanted to send word to some one how many marbles there are, and you could not speak to them, how would you do?—write the number down.

Yes, and this is called notation. Now, see whether you remember what I have told you, to REPEAT numbers in words is called numeration, and to WRITE them down is called notation.

If we write them down in words they take much room, so instead we write them down in—figures, but could we make a different figure for every number? No. Why? Because there are so many numbers. How many figures do we use. Nine. Very well, but if we want to write down sixteen, which is a larger number than nine, how do we manage? We set down two figures. Yes, we might say 8 and 8 or 7 and 9, but if we had a large number we should have to use many figures to express it, we must see whether there is not a better plan.

Which is the first number we have no character for. Ten. Now, suppose I say that I with a stroke over it shall stand for ten (1'), 2 with a stroke over it for twenty (2'), 3' for thirty, 4' for forty, 5' for fifty, &c. We shall be able to set down any number up to 100, for which we might write down 1 with 2 strokes over (1''), and for two-hundred 2'', &c. Going on in this way, making (1'''), (2'''), (3'''), &c., to stand for one-thousand, two-thousand, three-thousand, &c., we may set down any number up to thousands.

Now write on your slates as I have told you the following numbers:—nineteen, fifty-five, two-hundred and seventy-two, five-thousand-six-hundred and fifty-eight. Some will write them down 91, 55', 272'', 855'5'6'', others 1'9, 5'5, 2''7'2, 5''6'5'2, &c. If any of the children can't do it, practise them in it till they can, when all can do it shew them on the black-board, the different ways in which the numbers have been written down.

Now, children, you see one has written nineteen down 1'9, and another 91, are they both right? Yes. Then it makes no difference which we place first, so long as you put the right number of strokes. Now I am going to show you how to write down the numbers without any strokes. Each copy on his slate the figure I have drawn.

Thousands.	Hundreds.	Tens.	Units.

Now write down two-thousand-five-hundred and twenty-three in the places marked out. Is there any need to use the strokes? No, Sir. Why? Because it tells what the number stands for at the top. (Children to learn the words above, and then rub them out, and practise writing down numbers in the spaces marked). Now children, what have I called the figures in the first place? Units. Then all numbers from one to nine are called units. The word unit means one, why then should you think we call the numbers units? Because we can write them down in one figure. Now remember you are always to put the units in the first place. Reckoning from which side? The right hand side. The tens in the second place; the hundreds in the third place; and the thousands in the fourth place.

Rub out the lines and write down four-hundred and two without them, (the children will most likely write down forty-two, then tell them to write down forty two, and they will see at once that as both are alike there must be some mistake.)

Now, children, where were you to place the hundreds? the third place from the right. Have you put them down in the third place? No, in the second place. Why did you not put them down in the third place? Because you gave no tens. Mark down the lines again, and write down 402 in them; what is there between the hundreds and the units? Only a space. Now leave out the lines and put a cipher (0) where the space was thus 402. Why is the cipher put in? To fill up the space left empty. Does it stand for a number? No. But it is put in to fill up the place of a number. Yes, and to keep the other numbers in—their right positions.

Practise the children now in writing down numbers from dictation, especially such as will need the use of ciphers, till they can do it with facility. It will be better at first to confine yourself to numbers, of which the children can form some definite idea not exceeding thousands. —(Papers for the Schoolmaster.)

Notes of Lessons on Natural History. (1)

NOTES OF A LESSON ON THE COW.

Ages from 9 to 11.

I want to see this afternoon if we cannot talk a little about the Cow. We have not much time, so we cannot do much, and I can do nothing without your help. Now who is willing to help me?

How can you help me? "*By thinking.*" Yes, but thinking of what?

"*Of what we are saying.*" Yes, by thinking of what we are saying. What are we going to do? "*Talk about the Cow.*" How much about it? "*A little.*" Who is going to talk about it? "*We are.*" Now, then, we will begin. Tell me some of the principal parts of the Cow? "*The head, body, neck, legs, and tail, etc.*" How many parts have we named? "*Five.*" Say them altogether for me. Now let us speak about its head first. What sort of a head has it? "*A long head.*" Yes, it has a long head. "Why has it a long head? Think a moment. Where is its food?" "*On the ground.*" Yes. What sort of a neck has it? "*A short neck.*" Yes, and what sort of legs? "*Long legs.*" And its food is on—"the ground." Now if it had a short neck and small head, lifted up by long legs, it could not—"reach its food." Then why has it a long head? "*That it may be able to reach its food.*" Now, then, for something about its mouth. What sort of a mouth has it? "*A large mouth.*" Who has seen inside it, and noticed something strange about its teeth? (Some, perhaps, may have seen, but none noticed them.) Tell me what the Cow eats? "*Grass, turneps, mangel wurzel, hay, etc.*" Yes, but its principal food is "*grass.*" Now we want to find the best sort of teeth for the cow to eat grass with. You have all seen your mother going to make a pudding, and, perhaps, some of you have helped her. Tell me some of the things she does. "*Mixes the flowers,*" "*chops the suet.*" Ah, that is the one I want most. She chops the "*suet.*" Now what does she chop it with? "*A knife on a board.*" Yes, she does it with a knife and a board. Now why does she not do it with two knives, so (show them). "*Because she could not cut it so well.*" Yes, that is the real reason: she could not do it so well without the board; she must have a knife to "*cut it with,*" and a board to "*cut it on.*" Now you must tell me one other thing. How many have seen their mother mashing potatoes? What does she mash them with? "*A spoon.*" Why does she not use a knife? "*Because it would not make them so smooth and soft.*" Then when she wants to chop things small she uses a "*knife and board;*" and when she wants to make them smooth and soft she uses a "*large spoon.*" Now the cow wants teeth to do just these two kinds of things to its food. What two things? "*Chop it small and mash it smooth.*" Now look at me while I try and make something like some teeth on the black board. Now look at these, and see if you can find what each of them are suited for. I have numbered them. Let us look at No. 1 first. See they are sharp and pointed. What do you think they are fitted for? "*For cutting.*" Think, does your mother cut with anything pointed—say a fork? What do you do with your fork at dinner? "*Hold the meat still while we cut it.*" That is right; and these pointed teeth are just for the same thing you have used your fork for. What is that? "*For holding tight.*" Now the cow does not want to hold anything tight while it eats. Who does? "*Those who think it will get away.*" Tell me one? "*A lion.*" Yes, a lion wants a good many "*holding teeth,*" but the cow "*does not.*" Well, I will rub these off now; we have two sorts left. Look at No. 2; what are these for? "*To cut with.*" To be sure—to cut with. And we said the cow wanted teeth just for the same purpose your mother wanted a knife—to "*chop up with.*" Now look at No. 3. What are these for? "*For crushing things smooth.*" And the cow wants them because it needs "*to mash or grind its food with.*" Now tell me what sort of teeth the cow wants? "*Teeth to cut and teeth to grind.*" Once again, once more. And just such teeth the cow has. What sort of teeth? What for? Now you told me that your mother could cut suet better with "*a knife and a board*" than she could with "*two knives.*" Now if the cow wants to cut her food well, it ought to have not only teeth to "*cut,*" but something like a board to cut it on. Does any one know if it has? Well, I must tell you. On the bottom jaw of the cow it has eight cutting teeth. Where? How many? What has it on its bottom jaw? And at the top it has no teeth at all, but in their place it has a tough hard pad, without feeling, which serves instead of "*a board.*" What has it on the top? What sort of a pad? And when it goes to eat it chops it with its "*cutting teeth*" against the pad, and is able to "*make it very small.*" Well, but the cow has other teeth too. What are they? "*Teeth to grind.*" Where will it want these? "*Both at the top and bottom.*" Yes, and there it has got them. Now let me see what you can tell me about the cow's teeth—RECAPITULATION.

There is something else in the cow's mouth beside its teeth. What is that? "*Its tongue.*" What sort of a tongue? "*A long tongue.*" Yes, and something else? "*A rough tongue.*" What does it use it for? What did you say it eat? "*Grass.*" And how does grass grow? In little tufts, or each blade by itself? "*In blades.*" Yes, it grows in blades.

When you are hungry, and you have a piece of bread given you, what do you want to do? "*Get a good bite.*" Yes, and so does the cow. If your bread was in crumbs would you like to eat only a crumb at the time? What would you do with the crumbs? "*Put a great many in at once.*" What would you put them in with? "*Our hands.*" Well the cow has no hand. What can it do to get a good mouthful of grass? "*Twist them in with its long tongue.*" Yes, that is right. It twists the grass into its mouth with "*its long tongue.*" What does it twist them in with? What else besides long did we say it was?

When the cow is biting off the grass what is it doing besides? "*Walking about*" from "*place to place.*" Yes, all the time it is biting off the grass it is "*Walking about from place to place.*" Yes, it walks and keeps biting the grass, sometimes from morning till dinner time. For how long? "*From morning till dinner time.*" Well its mouth cannot hold all it bites off; what does it do with it? "*Swallows it.*" Yes, it swallows it as soon as it has "*bitten it off.*" But what did you tell me the cow wanted to do to its food? "*Chop it up and mash it smooth.*" Well, but how can the cow do this when it swallows it directly without biting it all? We are quite right in saying both these things, that it "*swallows it directly,*" and also that it takes a good time to "*chew and mash its food.*" Now how can it do both?

What sort of a body has the cow? "*A large body.*" And inside this large body the cow has a very large stomach. What sort of a stomach? "*A large stomach.*" And in this large stomach there are four divisions, which we will call cupboards. How many cupboards? "*Four.*" Perhaps I can make something like it on the board. Now when the cow first bites off its food we said it "*swallowed it directly,*" and it passes it at once into the largest of these divisions or "*cupboards,*" which I have marked 1. And it goes on eating for "*two or three hours*" until this cupboard is "*full,*" and then the cow being quite "*tired,*" it lays down under "*a tree.*" Who has seen it lying down? What was it doing? "*Moving its mouth.*" Why do you think it was moving its mouth? "*It was chewing its food,*" yes it was chewing the very food it had bitten off and swallowed "*in the morning.*" The cow has just the same power of returning its food to its mouth out of its cupboard as you would have of taking anything from your cupboard and putting it in your mouth with your hands, so when it lays down in the shade it just "*brings its foot into its mouth,*" and "*chews it over again.*" This is called chewing the cud. "What is it called? "*Chewing the cud.*" Tell me again, how does the cow look when chewing the cud? "*Very comfortable.*" Yes any one can see she enjoys it.

Nor after the cow has swallowed this a second time it passes into the second division or cupboard. This inside is something like a honey comb, see I have crossed it over to look something like it. What is it like inside? "*A honey comb.*" The food when it passes into this cupboard is soft and gets pressed into these cells. Now what shape do you think it is when it comes out? "*Round,*" yes it is made into little balls. What is it made into? "*Balls.*" Now when the cow has emptied its first cupboard and it is all packed nicely into this second one, it just begins all its work over again, the balls are returned to the mouth the second time and chewed over again—and then it is swallowed into the third cupboard—and all this is called "*chewing the cud.*" How many times does it chew its food? How many times is the food in its mouth? What is the food when put into the first cupboard? "*Grass.*" What in the second? "*Little soft balls.*" How many cupboards are there? &c.

Now, dears, can you tell me why the cow has had these four cupboard given to it, and why does it take all this trouble about its food?

Does it want much or little? "*Much.*" And if it wants much it "*takes a long time to cut it.*" And what is the cow doing all the time it is eating? "*Standing.*" And if it stood for a very long time it would get "*tired.*" Well that is one reason why it does not chew the grass at once, but there is another better one still: can you think of it?

Supposing you lived by a wood where some beautiful chestnuts grew and you wanted to fill your little basket with them, very badly indeed, and supposing you knew there were some very savage bulls there who would run at you if they saw you, and supposing one day you knew they were gone a little way off, you would run in and pick up "*the chestnuts,*" and put them into "*the basket*" as "*quickly as we could;*" and you would not stay to "*eat them there.*" You would fill the basket "*quickly*" and get out of the wood, home again as fast as you could. In some countries the cow has enemies, so when it goes to get its food it just takes enough to "*fill its first cupboard,*" and then it goes off to some safe place to eat it in peace or to "*chew the cud.*"

Recapitulation—If time permitted I should next take the legs as suited for locomotion—the eyes as looking all ways—the ears as inclined backwards—the tail as a brush for the flies—and the horns and hoofs as means of defence.

Then draw from them the exceeding usefulness of the animal in all its parts and finish by asking them to give me the reason why they learned so many wonderful things about animals and lead them to see it was to teach them the wisdom and goodness of God, and as children easily remember rhyme, give them a verse something like this to repeat.

As we learn about animals, useful and strong
Their clothing, their structure, their food,
Let us think of this text, it is not very long
"God saw—and behold it was good."

—Papers for the Schoolmaster.

(1) Words in italics in all the Notes of Lessons are those that are supposed to be said by the children when the teacher pauses to allow them to complete by themselves his own sentence.

LITERATURE.

POETRY.

"Nothing to Wear."

AN EPISODE OF CITY LIFE.

Miss Flora M'Flimsey, of Madison square,
Has made three separate journeys to Paris,
And her father assures me, each time she was there,
That she and her friend Mrs. Harris
Spent six consecutive weeks without stopping,
In one continuous round of shopping;
Shopping alone, and shopping together,
At all hours of the day, and in all sorts of weather;
For all manner of things that a woman can put
On the crown of her head or the sole of her foot,
Or wrap round her shoulders, or fit round her waist,
Or that can be sewed on, or pinned on, or laced,
Or tied on with a string, or stitched on with a bow,
In front or behind, above or below:
For bonnets, mantillas, capes, collars, and shawls;
Dresses for breakfasts, and dinners, and balls;
Dresses to sit in, and stand in, and walk in;
Dresses to dance in, and flirt in, and talk in;
Dresses in which to do nothing at all;
Dresses for winter, spring, summer, and fall;
All of them different in colour and pattern,
Silk, muslin, and lace, crape, velvet, and satin,
Brocade, and broadcloth, and other material,
Quite as expensive and much more ethereal;
In short, for all things that could ever be thought of,
Or milliner, modiste, or tradesman, be bought of,
From ten-thousand francs robes to twenty-souls frills;
In all quarters of Paris, and to every store,
While M'Flimsey in vain stormed, scolded, and swore,
They footed the streets, and he footed the bills.

The last trip, their goods shipped by the steamer 'Arago,'
Formed, M'Flimsey declares, the bulk of her cargo,
Not to mention the quantity kept from the rest,
Sufficient to fill the largest-sized chest,
Which did not appear on the ship's manifest,
But for which the ladies themselves manifested
Such particular interest that they invested
Their own proper persons in layers and rows
Of muslins, embroideries, worked under-clothes,
Gloves, handkerchiefs, scarfs, and such trifles as those;
Then wrapped in great shawls like Circassian beauties,
Gave good-bye to the ship, and co-by to the duties.
Her relations at home all marvelled, no doubt,
Miss Flora had grown so enormously stout
For an actual belle and a possible bride;
But the miracle ceased when she turned inside out,
And the truth came to light, and the dry goods beside,
Which, in spite of collector and Custom-house sentry,
Had entered the port without any entry.

And yet, though scarce three months have passed since the day
This merchandize went, on twelve carts, up Broadway,
This same Miss M'Flimsey, of Madison-square,
The last time we met was in utter despair,
Because she had nothing whatever to wear!

I should mention just here, that out of Miss Flora's
Two hundred and fifty or sixty adorers,
I had just been selected as he who should throw all
The rest in the shade, by the gracious bestowal
On myself, after twenty or thirty rejections,
Of those fossil remains which she called 'her affections,'
And that rather decayed, but well-known work of art,
Which Miss Flora persisted in styling 'her heart.'

Well, having thus wooed Miss M'Flimsey, and gained her,
With the silks, crinolines, and hoops that contained her,
I had, I thought, a contingent remainder,
At least, in the properly, and the best right
To appear as its escort by day and by night:
And it being the week of the Stuckups' grand ball—
Their cards had been out a fortnight or so,

And set all the Avenue on the tiptoe—
I considered it only my duty to call,
And see if Miss Flora intended to go.
I found her—as ladies are apt to be found,
When the time intervening between the first sound
Of the bell and the visitor's entry is shorter
Than usual—I found—I went say I caught—her
Intent on the pier-glass, undoubtedly meaning
To see if perhaps it didn't need cleaning.
She turned as I entered—'Why, Harry, you sinner,
I thought you went to the Flashers' to dinner!'
'So I did,' I replied, 'but the dinner is swallowed,
And digested, I trust, for 'tis now nine or more,
So being relieved from that duty, I followed
Inclination, which led me, you see, to your door.
And now will your ladyship so condescend,
As just to inform me if you intend
Your beauty, and graces, and presence to lend
(All which, when I own, I hope no one will borrow)
To the Stuckups', whose party, you know, is to-morrow?'

The fair Flora looked up with a pitiful air,
And answered quite promptly, 'Why Harry, *mon cher*,
I should like above all things to go with you there;
But really and truly—I've nothing to wear.'

'Nothing to wear! Go just as you are;
Wear the dress you have on, and you'll be by far,
I engage, the most bright and particular star
On the Stuckup horizon'—I stopped, for her eye,
Notwithstanding this delicate onset of flattery,
Opened on me at once a most terrible battery
Of scorn and amazement. She made no reply,
But gave a slight turn to the end of her nose,
(That pure Grecian feature), as much as to say,
'How absurd that any sane man should suppose,
That a lady would go to a ball in the clothes,
No matter how fine, that she wears every day!'

So I ventured again—'Wear your crimson brocade,'
(Second turn up of nose)—'That's too dark by a shado.'
'Your blue silk'—'That's too heavy;' 'Your pink'—'That's
too light.'

'Wear tulle over satin'—'I can't endure white.'
'Your rose-coloured, then, the best of the batch'—
'I haven't a thread of point lace to match.'
'Your brown moire antique'—'Yes, and look like a Quaker;'
'The pearl-coloured'—'I would, but that plaguey dress-maker
Has had it a week.'—'Then that exquisite lilac,
In which you would melt the heart of a Shyllock'—
(Here the nose took the same elevation)
'I wouldn't wear that for the whole of creation.'

'Why not? It's my fancy, there's nothing could strike it,
As more *comme il faut*'—'Yes, but, dear me, that lean
Sophronia Stuckup has got one just like it,
And I won't appear dressed like a chit of sixteen.'
'Then that splendid purple, that sweet Mazarine;
That superb point d'aiguille, that imperial green,
That zephyr-like tarlatan, that rich grenadine'—
'Not one of all which is fit to be seen.'

Said the lady, becoming excited and flushed.
'Then wear, I exclaimed, in a tone which quite crushed
Opposition, 'That gorgeous toilette which you sported
In Paris last spring, at the grand presentation,
When you quite turned the head of the nation,
And by all the grand court were so very much courted.'

The end of the nose was portentously tipped up,
And both the bright eyes shot forth indignation,
As she burst upon me with the fierce exclamation,
'I have it three times at the least calculation,
And that and the most of my dresses are ripped up!'

Here I ripped out something, perhaps rather rash,
Quite innocent, though; but, to use an expression,
More striking than classic, 'it settled my hash,'
And proved very soon the last act of our session.

'Fiddlesticks, is it, sir? I wonder the ceiling
Doesn't fall down and crush you—oh, you men have no feeling,
You selfish, unnatural, illiberal creatures,
Who set yourselves up as patterns and preachers.

Your silly pretence—why what a mere guess it is!
Pray, what do you know of a woman's necessities?
I have told you and shown you I've nothing to wear,

And it's perfectly plain you not only don't care,
 But you do not believe me' (here the nose went still higher).
 'I suppose if you dared you would call me a liar.
 Our engagement is ended, Sir—yes, on the spot;
 You're a brute, and a monster, and—I don't know what.'
 I mildly suggested the words—Hottentot,
 Pickpocket, and cannibal, Tartar, and thief,
 As gentle expletives which might give relief;
 But this only proved as spark to the powder,
 And the storm I had raised came faster and louder,
 It blew and it rained, thundered, lightened and hailed
 Interjections, verbs, pronouns, till language quite failed
 To express the abusive, and then its arrears
 Were brought up all at once by a torrent of tears.
 Well, I felt for the lady, and felt for my hat too,
 Improvised on the crown of the latter a tattoo,
 In lieu of expressing the feelings which lay
 Quite too deep for words, as Wordsworth would say;
 Then, without going through the form of a bow,
 Found myself in the entry—I hardly knew how—
 On door-step and side-walk, past lamp-post and square,
 At home and up stairs, in my own easy chair;
 Poked my feet into slippers, my fire into blaze,
 And said to myself, as I lit my cigar,
 Supposing a man had the wealth of the Czar
 Of the Russias to boot, for the rest of his days,
 On the whole, do you think he would have much to spare,
 If he married a woman with nothing to wear?
 Since that night, taking pains that it should not be bruited
 Abroad in society, I've instituted
 A course of enquiry, extensive and thorough,
 On this vital subject, and find, to my horror,
 That the fair Flora's case is by no means surprising,
 But that there exists the greatest distress
 In our female community, solely arising
 From this unsupplied destitution of dress,
 Whose unfortunate victims are filling the air
 With the pitiful wail of 'Nothing to wear.'
 Researches in some of the 'Upper Ten' districts
 Reveal the most painful and startling statistics,
 Of which let me mention only a few:
 In one single house, on the Fifth Avenue,
 Three young ladies were found, all below twenty-two,
 Who have been three whole weeks without anything new
 In the way of flounced silks, and thus left in the lurch,
 Are unable to go to ball, concert, or church.
 In another large mansion near the same place,
 Was found a deplorable, heart-rending case
 Of entire destitution of Brussels point lace.
 In a neighbouring block there was found, in three calls,
 Total want, long-continued, of camel's hair shawls;
 And a suffering family, whose case exhibits
 The most pressing need of real ermine tippets;
 One deserving young lady almost unable
 To survive for the want of a new Russian sable;
 Another confined to the house, when its windier
 Than usual, because her shawl isn't India.
 Still another, whose tortures have been most terrific
 Ever since the sad loss of the steamer 'Pacific,'
 In which were engulfed, no friend or relation
 (For whose fate she perhaps might have found consolation
 Or borne it, at least, with serene resignation),
 But the choicest assortment of French sleeves and collars
 Ever sent out from Paris, worth thousands of dollars,
 And all as to style most *recherché* and rare,
 The want of which leaves her with nothing to wear,
 And renders her life so drear and dyspeptic
 That she's quite a recluse, and almost a skeptic,
 For she touchingly says that this sort of grief
 Cannot find in religion the slightest relief,
 And Philosophy has not a maxim to spare
 For the victims of such overwhelming despair.
 But the saddest by far of all these sad features
 Is the cruelty practised upon the poor creatures
 By husbands and fathers, real Bluebeards and Timons,
 Who resist the most touching appeals made for diamonds
 By their wives and their daughters, and leave them for days
 Unsupplied with new jewelry, fans, or bouquets,
 Ever laugh at their miseries whenever they have a chance,
 And deride their demands as useless extravagance;
 One case of a bride was brought to my view,

Too sad for belief, but alas! 'twas too true,
 Whose husband refused, as savage as Charon,
 To permit her to take more than ten trunks to Sharon.
 The consequence was, that when she got there,
 At the end of three weeks she had nothing to wear,
 And when she proposed to finish the season
 At Newport, the monster refused out and out,
 For his infamous conduct alleging no reason,
 Except that the waters were good for his gout:
 Such treatment as this was too shocking, of course,
 And proceedings are now going on for divorce.
 But why harrow the feelings by lifting the curtain
 From these scenes of woe? Enough, it is certain,
 Has here been disclosed to stir up the pity
 Of every benevolent heart in the city,
 And spur up humanity into a canter
 To rush and relieve these sad cases instant.
 Wont somebody, moved by this touching description,
 Come forward to-morrow and read a subscription?
 Won't Stewart, or some of our dry goods importers,
 Take a contract for clothing our wives and daughters?
 Or, to furnish the cash to supply these distresses,
 And life's pathway strew with shawls, collars, and dresses,
 Ere the want of them makes it rougher and thornier,
 Wont some one discover a new California?

Oh ladies, dear ladies, the next sunny day
 Please trundle your hoops just out of Broadway,
 From its whirl and its bustle, its fashion and pride,
 And the temples of trade which tower on each side,
 To the alleys and lanes, where Misfortune and Guilt
 Their children have gathered, their city have built;
 Where Hunger and Vice, like twin beasts of prey,
 Have hunted their victims to gloom and despair;
 Raise the rich, dainty dress, and the fine brodered skirt,
 Pick your delicate way through the dampness and dirt,
 Grope through the dark dens, climb the rickety stair
 To the garret, where wretches, the young and the old,
 Half-starved, and half-naked, lie crouched from the cold.
 See those skeleton limbs, those frost-bitten feet,
 All bleeding and bruised by the stones of the street;
 Hear the sharp cry of childhood, the deep groans that swell
 From the poor dying creature who writhes on the floor,
 Hear the curses that sound like the echoes of Hell,
 As you sicken and shudder and fly from the door;
 Then home to your wardrobes, and say, if you dare—
 Spoiled children of Fashion—you've nothing to wear!

And oh, if perchance there should be a sphere,
 Where all is made right which so puzzles us here,
 Where the glare, and the glitter, and unsel of Timu
 Fad and die in the light of that region sublime
 Where the soul, disenchanting of flesh and of sense,
 Unscreened by its trappings, its shows, and pretence,
 Must be clothed for the life and the service above,
 With purity, truth, faith, meekness, and love;
 Oh, daughters of Earth! foolish virgins beware!
 Lest in that upper realm you have nothing to wear!

SCIENCE.

Description of four Species of Canadian Butterflies.

Having in our last number expressed an opinion that *P. troilus* was probably an inhabitant of the more southern portions of these Provinces, we were much gratified by receiving a specimen of that species from D. W. Beadle, Esq., of St. Catherine's, Canada West. As it is therefore now proved to be a Canadian species, we subjoin a figure and description of it. We shall be greatly obliged if other entomologists follow Mr. Beadle's example, and forward us specimens of such species as may come under their notice, and which we may overlook in the course of our future papers on the Canadian Lepidoptera, together with such information regarding their larvæ, pupæ, food-plants, habitats, seasons, &c., as our correspondents can furnish, and if required we shall be happy to return the specimens, and defray the cost of conveyance. We would also be glad of any useful and accurate observations on the Natural History of those species which we describe, and we especially desire notice of their occurrence in different localities, and whether common or rare. If Canadian Lepidopterists will respond to this appeal, we shall then

have data upon which to found a more precise knowledge of the distribution of the various species; this is at present very vague, such words as North America, Canada, United States, &c., being employed in most scientific works to indicate the localities. A catalogue of all the Canadian Lepidoptera is a great desideratum, and numerous zealous observers, in different parts of the country, willing to communicate their observations, are the only means by which we can ever hope to arrive at such a much-to-be-wished for result.

Hitherto we have given figures of each of the species, but in future we shall engrave only one in each genus, except when circumstances render it advisable to figure more, and we shall endeavor to get through all the diurnal lepidoptera as speedily as possible. We shall frequently include species which inhabit New York and other Northern States, and which are likely to occur in Canada. As we know of no work exclusively devoted to Canadian species, we are compelled to adopt this course, as otherwise many Butterflies would be omitted, which doubtless inhabit those portions of this country with which we are unacquainted. We hope our correspondents will be able to set at rest any doubts respecting some, if not all such species, by sending us specimens, and all necessary information regarding them.

GENUS PAPILO. (Continued.)

Species 3.—*Papilio Troilus*. The Laurel Swallow-Tail.



a.



b.

This species is about the size of *P. asterias*. Upper side, the wings denticulated, black, with the notches yellow; the anterior wings have on their hind margin a row of six or seven pale yellow spots, which gradually increase in size, from the costa to the inner margin. They have beyond this a spotted band of four or five small and obscure spots placed in a line, and formed of greyish atoms. The posterior wings have a marginal series of seven lunules, the first of which is orange, whilst the other six are of a greenish or bluish grey. Inside these marginal lunules is a broad bluish grey band, divided by the nervures; the lunule of the anal angle is triangular, orange on its inner margin, and greenish grey on its outer. The tail is black, very short, and a little swollen at its extremity. Under side, the wings brownish black at the base. Anterior wings, with the spots of the upper side much better defined, so that they here form two spotted bands; they have also two triangular yellow spots which are placed beyond the others. Posterior wings with two bands, each formed of six orange lunules, a little tinged with yellow on their edges. The anal spot fulvous, only tinged with grey on its outer edge. Between these two spotted bands there are seven glossy blue lunules, the third of which is partly covered by a verticle oblong spot, generally of a greenish grey. The body is black with some reddish dots on the front of the thorax, and a series of yellow spots on each side. The female differs from the male in the following particulars: the anterior wings are generally destitute of the marginal row of yellow spots, the second row being seldom or never indicated by any greyish atoms; the posterior wings have above the marginal lunules a sort of band badly defined, rather broad, and formed of shining blue atoms, whilst in the male this band is better defined, and of a bluish or greenish grey. The under side differs but little.

a the Caterpillar. b the Chrysalis.

The caterpillar is green, with a yellow marginal band, which mixes itself a little with the green color. It has upon the sides two rows of blue dots, and upon the fourth segment two flesh colored spots, upon the third segment a flesh colored eye spot with a deep blue ocellus, and upon the first a black collar. The underside of the body and of the head are of a flesh-color, a little tinged with ferruginous. All the feet are ferruginous, but at the base of the membranous ones is a row of seven blue dots. It feeds on sassafras, (*Laurus sassafras*) and Mr. Beadle has observed it on spice wood, (*Laurus benzoin*). It also feeds on many other species of Laurel.

The chrysalis is a little gibbous, of a pale ferruginous color, with stripes of a darker tint.

The larvæ which are found in autumn change to pupæ before the winter, and produce the imago at the beginning of the following Summer; the others are hatched from the end of May all through the month of June and beginning of July.

This fine butterfly is very easily caught. It generally flies around the laurels, and loves to bask on the fragrant blossoms. It is common in Georgia and Virginia, and is found in the island of Jamaica. It is included in Dr. Harris' List of Lepidoptera inhabiting Massachusetts, and as before mentioned we have received it from St. Catherine's, Canada West.

We now come to the second division of the Papilionidæ.

SUB-FAMILY II. PIERIDI.

Anal edge of the hind wings not concave, but grooved or formed into a gutter to receive the abdomen; the anterior tibiæ do not possess a spur in the middle, and the tarsal ungues are one or two dentate.

The caterpillars are not furnished with a nuchal fork. They are slightly pubescent, and rather slender at each end of the body.

It contains many genera, of which we believe only two occur in Canada, viz.: *colias* and *pieris*. We do not know whether any species of the beautiful genera, *aporia*, *xanthidia*, *gonepteryx* and *callidryas*, which inhabit the Southern and middle, and the Southern parts of the Northern States, are to be met with any where in Canada, but we hope to learn that we may include some of them in our fauna.

GENUS I. COLIAS.

Palpi short, much compressed, fringed with short and close hairs, the last joint much shorter than the preceding; antennæ straight, short, terminated by an obtuse gradually formed club which occupies about a fourth of their length, the head has no frontal tuft; forewings sub-triangular, and the posterior rounded; the discoidal cell of the hind wings closed; thorax thick; body shorter than the wings; tarsal ungues bifid; fore legs alike in both sexes. Their flight is very rapid, and they are difficult to capture. The caterpillars naked, elongate, cylindric, very finely setose and tubercled. The chrysalides rather short, sub-angular, gibbous, slightly beaked in front, attached by the tail, and by a girt behind the thorax.

The larvæ feed on leguminous plants.

This is one of the most natural genera of diurnal lepidoptera; the color is always some shade of yellow or orange, more or less bright, and frequently tinged with green. All have a portion of the wings marked with black; the forewings also exhibit a black discoidal spot, and the posterior a central spot, which is orange above, and generally silvery beneath. The palpi and antennæ are always reddish or rosy.

The general resemblance between the species and some being extremely subject to variation, has led to much confusion in their synonymy. The species are not very numerous, and none of them, even of the exotic kinds, beyond the middle size. This genus is found in all the temperate parts of the globe, but they are not known to inhabit the equatorial regions of the two continents. All those which are known come from Europe, Siberia, Cape of Good Hope, Barbary, North America, Mexico and New Holland. Six or seven species inhabit North America, of which two are found in Canada, viz.: *C. edusa* and *Philodice*. We also describe a third, *C. chrysotheme* which occurs in the State of New York. Two or three species inhabit Labrador and the Hudson's Bay Territories, and the remaining one the Southern States.

Species 1.—*Colias Edusa*. The Clouded Yellow.

Male;—Antennæ, rose-colored, with the club somewhat embrowned. Upper side; anterior wings, deep orange or saffron co-

By some authors *Gonepteryx* and *Colias* are separated into a third sub-family called *Rhodoceridi*, but for the sake of simplicity we have adhered to the more general arrangement which includes them amongst the Pieridi.

lor, with a broad, deep blackish brown margin, a little indented internally with the nervures which are finely but distinctly marked with yellow, and divide the black band, the fringe rose-colour; a black oblong spot marks the disk nearer the cost. than the inner margin; costa, paler than the rest of the wing. Posterior wings shaded with green, and on each a round deep orange discoidal spot: the margin is also deep blackish brown, the brown colour terminating in a point short of the anal angle, which is paler than the rest of the wing. Under side; anterior wings paler than on the upper upper side, and all that part of the wing corresponding to the border, greenish yellow, separated from the ground colour by a row of minute spots about six in number, increasing in size as they approach the inner margin, and placed parallel to the hind margin, the three first very indistinct and ferruginous, the other three black. The black discoidal sub-marginal spot has a minute white pupil and there are also two small ferruginous spots on the costa near the tip. Posterior wings, entirely pale yellow, in the centre is a compound eyelet, the exterior circle of which is composed of ferruginous scattered scales, which to form the iris are more condensed, and the two pupils, of which the outer one is the largest, are silvery. They have also a curved row of indistinct ferruginous spots placed parallel to the hind margin, and at the base a spot of rose-colour; the abdomen is greenish yellow, with the back black: thorax covered with rosy hairs; expansion of the wings 2 to 2½ inches. The female differs from the male in having the black marginal band of the anterior wings broader, more deeply dentated internally, and divided by a series of large greenish yellow spots.

Some varieties of the male have only one pupil to the eyelet on the posterior wings, and are smaller than that described. Examples of the female sometimes occur, in which the parts usually yellow are greenish white, a circumstance which has led some authors to describe it as distinct under the name of *Helice*. American specimens differ but slightly from European, but are not of quite so deep a tint as the latter.

The caterpillar is green, with a lateral stripe varied with white and yellow, and with an orange dot on each segment. It feeds (in Europe) on *medicago lupulina*, *cytisis austriacus*, various species of *trifolium* and other leguminous plants.

The chrysalis is green, with a lateral yellow line, and several ferruginous dots.

This handsome species appears in spring, and a second time in autumn. It is not a common species in this country. We took a very fine female on Montreal Mountain, September 10th, 1856. It was flying in a very sluggish manner, and we caught it under a hat. Boisduval says it is found in Europe, Egypt, the coast of Barbary, Nepal, Cachemere, Siberia and North America. In England, it occurs in the southern counties in considerable plenty, in certain years, while in others, scarcely an example is to be met with. It seems to prefer the vicinity of the sea, having been found more copiously along the south-eastern coast, particularly in the neighbourhood of Dover than elsewhere.

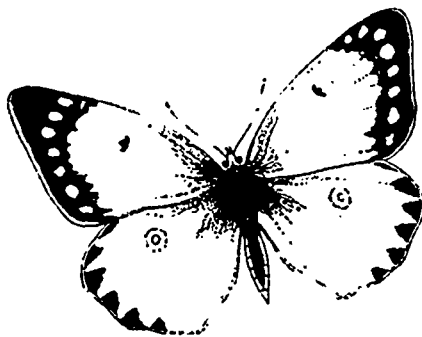
Species 2.—*Colias Chrysotheme*. The small clouded yellow.

This species resembles *Edusa* a little, but it is much paler, with the margin brown, divided on the anterior wings by fine yellow as in *Edusa* and the allied species, except that the discoidal spot of the fore wings has the centre rather pupilled with silver. The female nerves: the fore wings have, moreover, the cost. a broadly yellow. The discoidal spot is narrower, transverse, slightly marked, and edged with a little red. The under side of the anterior wings nearly is much paler than the female of *Edusa*, and the yellow orange colour only occupies the disk of the fore wings, the yellow spots which divide the dark margin are larger, more marked, and of a much paler yellow color.

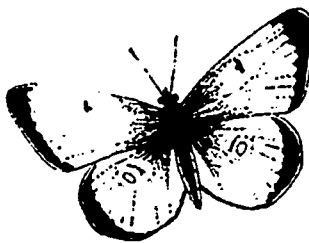
In Europe this pretty *Colias* is always smaller than *Edusa*, it is the contrary in North America, where it is rather larger than the latter. Boisduval says that this genus is divisible into two groups, *C. Edusa* belonging to the first, in which the males are provided

with a glandular space or sac at the anterior edge of the hind wings near the base, whilst in the second group, to which *C. Edusa Chrysotheme* belongs, they are destitute of this sac. This species is found in Hungary, Styria, and Southern Russia. According to Boisduval it is more numerous about New York than *Edusa*; it appears in spring and in autumn, the second brood being most numerous. We have never met with a description of the larva or pupa.

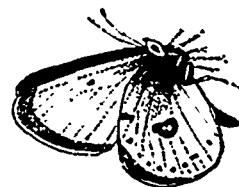
Species 3.—*Colias Philodice*. The clouded sulphur.



2 a.



2 b



2 c

Papilio Anthyale, Pap. cyot., &c. Augsburg, 1806, &c.

Male, the upper side of the wings sulphur yellow, with a rather broad black border, situated internally and drawn to a point on the posterior wings, a little before the anal angle. The anterior wings have besides this an oblong black discoidal spot, and the posterior a pale orange spot about the centre of the wing. Under side, anterior wings fine yellow, very pale on the inner margin, and powdered with black scales on the costa. The black discoidal sub-marginal spot has a white pupil, and there is a row of indistinct black spots parallel to the hind margin; posterior wings of a deeper tint than the anterior, with two coalescing, central ocelli having a ferruginous iris and silvery pupil; they have also a curved row of ferruginous spots parallel to the hind margin, a ferruginous spot at the basal angle, and another in the middle of the costal edge; all the wings strongly fringed with rosy; the body, antennae, &c., as in other species of the genus. The female differs from the male in the following manner:—General colour slightly paler; the black band of the fore wings is not so well defined, brownier, and interrupted by a series of yellow spots; the corresponding band on the hind wings is almost obsolete, and underneath these wings are of a dirty yellow colour instead of being of fine orange as in the male.



1

1 *Papilio Troilus*.—2 a *Colias Philodice*, (female).
2 b “ “ (male).
2 c “ “ (underside).

The caterpillar is stated to be green, with yellow lines and black dots, and feeds on the various trefoils; we have never seen it.

This butterfly is one of our most abundant species. In September we have seen more than twenty pitched at the same time on a bush of Michaelmas daisy, and in some parts of Canada the fields look almost yellow with their dancing forms. It is fond of pitching in muddy spots on roads, sometimes assembling in such places in considerable numbers. It is much more numerous at Sorel than about Montreal, but is very generally distributed over the whole of North America. It appears at the beginning of June, and having several broods during the season, worn individuals linger on the end of October, even to the confines of our desolate winter.

(Canadian Naturalist and Geologist.)

OFFICIAL NOTICES.



ANNEXATION OF PART OF THE TOWNSHIP OF BLANDFORD TO THE SCHOOL MUNICIPALITY OF GENTILLY.

His Excellency the Administrator of the Government in Council, has been pleased to approve of the sixth lot in the first range of the Township of Blandford, in the County of Nicolet, being comprised in that portion of the said Township, which was annexed to the school municipality of Gentilly in the ninth day of July last.

FEES ALLOWED FOR COPIES FURNISHED BY DEPARTMENT.

His Excellency the Administrator of the Government has been pleased to authorize the Superintendent of Education to demand and receive for every copy of any document demanded under and by virtue of the 13th clause of the Act 9th, Vict. cap 27, six pence per hundred words for each such copy, and one shilling for the certificate, which fees are to be applied towards paying the expenses of the departmental library.

APPOINTMENTS.

JACQUES CARTIER NORMAL SCHOOL.

Mr. John Brauneis, professor of music, has been appointed associate professor, in the place of Mr. Labelle, whose resignation has been accepted

SCHOOL COMMISSIONERS.

His Excellency the Administrator of the Government, has been pleased to approve of the following appointments of school commissioners.
County of Beauharnois.—*St. Stanislas de Kostka*: Messrs. Denis Campbell, Louis Bertrand, Joseph Cousineau, Théophile Courville and François Devoyeau dit Laframboise.

County of Charlevoix.—*St. Tit des Caps*: Messrs. Thaddée Simard and Louis Lamothe.

—*St. Fiddle*: Mr. François Tremblay Picoté.
County of Two-Mountains.—*St. Jérôme No. 4*: Messrs. Edouard Gougeon, François Thérien and Isidore Paquin.

County of Gaspé.—*Perce*: Mr. Edouard Guilmet.
County of Arthabaska.—*Bulstrode*: Messrs. Jean Paul Landry, Olivier St. Cyr, Joseph Belliveau, Charles Hébert and Olivier Bergeron.
County of Dorchester.—*Frampton*: Messrs. Léon Rousseau and Peter Lyons.

Pierre J. O. CHATEAU,
Superintendent of Education.

NOTICE TO SCHOOL COMMISSIONERS.

School Commissioners are hereby notified that they will no longer be permitted to dispose of any property belonging to their respective corporations, unless they shall have previously obtained the opinion of the Inspector of their district, as well on the necessity of the sale, as also on the sufficiency of the sum demanded therefor, or the set-up price, if it be intended to sell the property by auction. To facilitate and expedite sales, when deemed expedient, the Commissioners would do well to name their price, (or set-up price) in their application for permission to sell, and also obtain the recommendation of the Inspector of their particular district.

SHERBROOKE COUNTY BOARD OF EXAMINERS.

The Sherbrooke County Board of Examiners will meet at the Court House in Sherbrooke, on Tuesday, the first day of December next, for the examination of teachers.

S. A. HEND, Secretary.

JOURNAL OF EDUCATION.

MONTREAL, (LOWER CANADA) OCTOBER, 1857.

American Association for the advancement of Science.

(Continued from our last.)

The section of natural history and geology, seems even independently of its subsections of ethnology and statistics, the labours of which we have just been laying before our readers, to have absorbed a greater share of attention than the section of physical sciences.

Professor Dawson of McGill University, Montreal, read a paper on the varieties and mode of preservation of the fossils known as *Sternbergia*. These are usually mere cast in clay or sand having sometimes an external coating and traces of internal coaly partitions. They are found in the coal formation rocks of most countries and very abundantly in those of Nova Scotia. Until the recent discoveries of Corda and Williamson they were objects of curious and varied conjecture to geologists and botanists and were supposed to indicate some very extraordinary and anomalous structure. They are now known to be casts of the piths or internal medullary cavities of trees and the genera to which some of them belong have been pointed out.

Professor Dawson entered into a minute examination of several specimens of *sternbergia*, showing that they are most of them the impression of piths or of the compressed or flattened bark of the branches of conifers. He concluded by saying, "The coniferous character of the *sternbergia* in connection with their state of preservation, seems to strengthen a conclusion at which I have been arriving from microscopic and field examinations of the coal and carbonaceous shales, that the thickest beds of coal at least in Eastern America consist in a great part of the flattened bark of coniferous sigillaroid and lepidodendroid trees, the wood of which has perished by slow decay or appears only in the state of fragments and films of mineral charcoal. This is a view however on which I do not wish to insist, until I have further opportunities of confirming it by observation.

The most abundant locality of *sternbergia* with which I am acquainted, occurs in the neighbourhood of the town of Pictou, immediately below beds of erect calamites described in the journal of the geological society (vol. 7, p. 194.) The fossils are found in interrupted beds of very coarse sandstone, with calcareous concretions imbedded in a thick reddish brown sandstone. These gray patches are full of well preserved calamites which have either grown upon them, or have been drifted in clumps with their roots entire. The appearances suggest the idea of patches of gray sand rising from a bottom of red mud, with clumps of growing calamites, which arrested quantities of drift plants, consisting principally of *sternbergia* and fragments of much decayed wood and bark, now in the state of coaly matter, too much penetrated by iron pyrites, to show its structure distinctly. We thus probably have the fresh growing calamites, entombed along with the debris of the old decaying conifers of some neighboring shore, furnishing an illustration of the truth that the most ephemeral and perishable forms may be fossilized and preserved contemporaneously with the decay of the most durable tissues. The rush of a single summer may be preserved with its minutest striæ unharmed, when the giant pine of centuries has crumbled into mould. It is so now, and it was so equally in the carboniferous period."

A paper was read by Sir William Logan on the series of rocks which he has called the Huronian and Laurentian Series, the one from Lake Huron, and the other from the range of mountains which Mr. Garneau has the first called the "Laurentides." Sir William was followed by Mr. Hunt, who spoke on the origin of magnesium rocks. He contends that the deposits of mineral springs, and especially of calcareous waters, play an important part in the formation of rocks, and thus explains the interstratification of dolomites with pure limestone in the silurian rocks of Canada.

Professor Cook read a paper on the subsidence of lands on the atlantic coast of this continent, and from his own observations, and the published opinions of Professor Hitchcock and others, he came to the conclusion that this subsidence may be set down to an average of two feet in a century. The following curious fact was quoted among others by Mr. Cook: "At Dennisville, in Southern New Jersey, there is a large tract of marsh underlaid by cedar swamp

earth and timber. By probing the marsh with an iron rod, the workmen find where the solid timber lies, and then removing the surface sods and roots, they manage to work in the mud and water long one handed saws and cut off the logs, which then rise and float, as the timber is not water-logged at all, but retains its buoyancy, and the removal of that nearest the surface releases that which is below and it rises in turn so that a new snappy is constantly coming up to the workmen. In this way a single piece of swamp, which is below tide-level, has been worked for fifty years past, and still gives profitable returns.

A very interesting paper on the chemical formation of metamorphic rocks was read by Mr. Hunt. A letter of Sir R. Murchison on the crystalline rocks of the North Highlands of Scotland, and a note of Mr. Salter on fossils found at Durness attracted great attention. The following paper on the dressing of metallic ores by Professor Silliman will prove interesting to our readers.

Professor Silliman gave a brief description of a new system of dressing Metallic Ores. The Professor said the object of his remarks was to describe the general principle of a system of ore dressing, devised and put in practice at the Copper Mines of the Bristol Mining Company at Connecticut, under his own direction. The main features of this system are the perfect separation of the finer portions of the product of stamping and crushing, commonly known as "Slime Ore," from the coarser portions, without the aid of sieves or screens,—the application of the well known system of jigging directly to the stamped ore, which has hitherto been incapable of this mode of treatment. The adoption of such mechanical arrangements has rendered the whole process of ore dressing one continuous and self-sustaining system, in which human labor bears an exceedingly small ratio to the result obtained, compared with any system hitherto devised. In this system, the waste or refuse material is disposed of exclusively by gravity and moving water, without handling, while the ore is brought up to the highest mercantile percentage, however poor the original ore may be, no appreciable quantity of ore escaping as the waste.

The first of the above results is accomplished by the use of a new and exceedingly simple hydrostatic apparatus, devised by Mr. Stadtmuller, Mining Engineer to the Bristol Mining Company. (A model and sectional drawings of the apparatus were here shown to the audience.) The efficient cause of the success of this apparatus is the movement of a current of water in an inverted cone of iron, having an annular space surrounding an inner cone. The ore is admitted at the top, and is distributed over a conical surface to meet the ascending current of water, which is so adjusted in volume and force by a proper valve, and by a nice proportioning of the parts, that all the finer and more muddy portions of the ore are carried over the upper lip of the apparatus, while at the bottom escapes, with a more forcible current of water, through an adjustable orifice, all the coarser ore and metallic particles. These are certainly free from all slime, and are dressed upon a continuous arrangement of self-acting jugs, and are carried immediately to a percentage suitable for market. The proportion of the ore, (about one half,) which escapes at the upper portion of the hydrostatic cone, is treated by alternate subsidence in large conical vases, the denser portions from the bottom of which are dressed upon Bradford's ore separators, (a pan of copper having the reciprocal motion of the miner's shovel,) which have been found, when served with only the class of ores properly adapted to them, admirably successful and economical. The ores, too fine or small in size for the separator, are treated upon a large conical table of circular form, with a very gentle current of water spread in a thin sheet over the table, thus clearing the last traces of ore from the finer particles of sand with which they are mingled. This paper was illustrated by models and drawings, and by samples of the ore thus dressed, shewing in a very decided manner the beauty and efficiency of the system.

Prof. Chapman, of University College, Toronto, brought forward at considerable length his views on the origin of native metals in vein fissures. These views are at variance with those of the majority of chemists and geologists, at least in their application to the copper deposits of this continent. We give, therefore, an extended, and we believe faithful statement of Prof. Chapman's views from the *Gazette*.

"From the known fact that solutions of various metallic salts may be decomposed by voltaic agency, and the metal obtained in the simple state, it has long been a favorite theory with many geologists, that depositions of native metals, in veins, &c., are due to a similar cause. That such may be a perfectly legitimate conclusion in many instances, I am quite ready to admit; but, in applying this view to any particular case, it is necessary, unless the explanation is to be regarded as a mere theory of convenience,

that certain collateral circumstances be not altogether excluded from consideration. If these circumstances oppose themselves to our theory, and remain by it altogether unanswered; nay, if but a single well-proved fact withhold its concurrence from the conditions demanded—surely it is more consistent with our obligations to scientific truth, that we abandon the theory at once—however plausible in itself, and however convenient in its application—rather than attempt to maintain it by keeping these opposing conditions out of sight, or by wilfully ignoring their value. Now, my object in the present brief communication, is simply to bring before the notice of the Section, certain facts, experimental and otherwise, which appear to me to prove most incontestably, that, in nine cases out of ten, the so-called electro-chemical theory as explanatory of the origin of native metals in veins, is entirely fallacious.

We will take the case of native copper, under its known conditions of occurrence in the Lake Superior District and other parts of North America. The electro-chemical theory is constantly being brought forward in explanation of this particular case. As the copper is here, nominally, in intimate association with vast masses of erupted trap, it might naturally be inferred that the presence of both trap and copper was equally due to igneous action; or, where the copper occurs in small strings and arborescent masses apart from the trap, to a modification of this action, in volatilization and subsequent reduction of chlorid of copper or some other volatile compound. But the upholders of the electro-chemical theory, find these views apparently too simple for their approval. It is very possible that the copper may have originated by some other agency; but the following facts will, I think, shew that this unknown agency was not the electro-chemical principle, whatever else it may have been. The copper is very constantly found in the interior of zeolites or calc-spar, or surrounding crystals of the latter substance in such a manner as to shew that the calc-spar was solid before the solidification of copper—the copper often presenting the most sharply-cut impressions, even to the minutest striæ of the crystals of the calcareous spar. I mention this well-known condition of occurrence first, because it is commonly referred to as affording a strong proof of the deposition of the copper according to the electro-chemical theory, although nothing can really be more fatal to its reception.

The conditions of occurrence just alluded to, may, in the estimation of some, disprove the igneous origin of the copper; but equally do these conditions disprove its origin according to the other view. In the first place, it must be remembered that the zeolites, and carbonate of lime also, are *non-conducting bodies*; and hence that no deposition of metal can be made to take place upon them, by the electro-chemical process, unless their surfaces be first coated with graphite or some other conducting substance. This may be readily shown by the simple method of ascertaining the conductivity or non-conductibility of mineral bodies employed by Von Kobell. The substance under examination is to be placed in a solution of sulphate of copper, and touched by a slip of zinc, or a piece of zinc bent into a kind of tongs may be used to hold the mineral. A deposition of metallic copper will rapidly take place upon conducting bodies, such as pyrites, galena, graphite, anthracite coal, &c. &c.; but not upon non-conductors, as quartz, the feldspars, garnet, calc-spar, malachite, and other similar minerals.

This fact, when forced upon the attention of those who maintain the electro-chemical theory, has been allowed to be "an objection"; but that is not the proper term. It is an insuperable obstacle—nothing less—to the legitimate adoption of this theory; and until it can be satisfactorily explained away, to attempt to account for the origin of the copper by reference to the principle in question, is surely, to say the least, a mere waste of words. A few other objections to this electro-chemical hypothesis may be briefly touched upon. This hypothesis exacts necessarily a solution of the copper in some form or another.

Now, many of the minerals associated with these copper deposits—carbonate of lime, for instance,—are readily altered by immersion in cupreous solutions; whereas the crystals of carbonate of lime actually occurring with the copper, as well as those met with in its immediate neighborhood, exhibit no appearance of alteration, but retain on the contrary, their white color and original surface condition. By placing these same crystals for a short time in a solution of sulphate of copper, they become converted at the surface into malachite, or into a copper carbonate of similar aspect, more especially if the solution be kept at a moderately elevated temperature. Again, if the enormous deposits of Lake Superior originated in this manner, might we not reasonably look for the presence of vast secondary products, the results of the chemical decompositions which must necessarily have taken place. It is asking almost too much to assume that these secondary products may, from their

solubility, or from other causes, have entirely disappeared, without leaving behind them very manifest traces of their former presence. But, yet again, if we assume this origin for the copper, we must necessarily assume also that the cupreous solution came from above: that it is to say, from an *overlying*, not from an *underlying* source: as otherwise, from the filling up of the fissures, the supply would quickly have been cut off. This involves manifold difficulties of an easily imagined character.

My object, in the present note, is not to propose theories in explanation of the origin of these copper deposits, but simply to show that if one of the hypotheses already advanced with this view—that which attributes the larger copper masses (in intimate association with the trap) to direct igneous action, and the smaller, arborescent and more distant masses to gaseous emanations as previously explained—be not free from difficulty; the other, or so-called electro-chemical theory, is, in the cases referred to, absolutely untenable; and, amongst other reasons, chiefly for this namely: that the deposition of the copper on non-conducting bodies is opposed to all known principles. It is to be hoped, therefore, that those who still feel inclined to adopt and maintain this theory of convenience, will not forget to enlighten us as to the cause of the peculiar departure from known laws exemplified in the cases under review."

A second paper by Professor Chapman, related to the use of the Saltiness of the Sea. This is a subject of which too narrow views should not be taken, since it is easy to perceive many important uses secured by the substances held in solution in the ocean. Professor Chapman brought forward an interesting experiment, illustrative of the equal diffusion of this saline matter, under circumstances unfavorable to transference of the water itself; and leading to the conclusion that one important consequence of the saltiness of the sea is the regulation of the rate of evaporation from its surface.

"It is a current opinion that, in consequence of the surface of the sea becoming saltier and hence heavier by evaporation, a downward motion of the surface water necessarily takes place; and hence Lieutenant Maury's hypothesis that the sea is salt in order to produce circulation. Some time ago I suggested another object in explanation of the saltiness of the sea, viz.: that the sea is salt in order to regulate evaporation. The greater the amount of salt, the slower the evaporation of the water,—and the reverse: so that, if by any easily conceivable cause, or combination of circumstances, the normal degree of saltiness becomes either increased or diminished—a kind of self-regulating force is set up to resist the continuation of the abnormal action, until time restore the balance. Even leaving out of consideration the equalizing effects produced by the accession of fresh water to the surface of the sea by rain and rivers, it seemed to me that the principle of diffusion was in itself sufficient to prevent the sinking of the water thus affected by evaporation; or, at least, to prevent the sinking of this water to any extent. But how to prove the point. The fact that the saltiness of the open sea was substantially the same at considerable depths and at the surface, says nothing; as it would necessarily follow, that for every heavy particle of water that sunk, a lighter particle would rise up to supply its place; and hence the composition of the water would be kept uniform; without the principle of diffusion being in any way required to explain the phenomenon. After some consideration I adopted the following method, as one sufficiently trustworthy to afford an answer to the question under review:—I procured a leaden pipe one inch in diameter, and bent into the form of the letter U: each upright being about thirty-nine inches in height, and the connecting piece at the bottom rather more than twelve inches long. This I filled up to about an inch on each side with a solution of common salt in rain water (the salt being present to the amount of 3.786 per cent.) and then I carefully closed one end, leaving the other end open, but protected from dust by a cone of silver-paper fixed on a bent wire, and so arranged as not to prevent evaporation. The per centage of salt (3.786) was carefully ascertained, and the apparatus left in an unoccupied room, the window and door of which were kept almost constantly open, in order to promote the evaporation of the solution as much as possible. After the lapse of about three months, (April 18 to July 14,) portions were taken from each end of the tube, and from the connecting piece below, (a small orifice being made in this;) and the amount of salt in each portion was accurately determined. Now if the principle of diffusion had not been brought into play, it is evident that the solution in the open limb of the tube ought to have been stronger than that in the closed limb, although, by the circulating process, the amount of salt at the top and bottom of the former might have been alike; and, again, it will be equally evident that if the principle of diffusion were brought into play, the supposed sinking of the surface solution, as the result of evaporation,

must be altogether imaginary. Six separate determinations, two from each of the three portions of the tube, showed a per centage of salt essentially the same. The following table exhibits the results obtained:

	Solution.	Am. of salt.	Per centage of salt.
1 { A. From the top of the open limb, ..	302.261..	11.59...	3.833..
1 { B. From the bottom of the same, ..	300.24...	11.51...	3.835..
1 { C. From the top of the closed limb, ..	288.60...	11.055..	2.831..
2 { A. From the top of the open limb, ..	264.84...	10.16...	3.837..
2 { B. From the bottom of the same, ..	290.10...	11.12...	3.833..
3 { C. From the top of the closed limb, ..	306.66...	11.75...	3.832..

(To be continued in our next.)

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

We believe the following from *Putnam and Emerson's Magazine* is rather severe; but we publish it for the especial benefit of those who are continually disparaging our system of public instruction in Canada and extolling that of our neighbours. They will see that he who is determined so to do may pick holes in the best systems.

"We have had eulogies in plenty on our school system, its officers, and all its appurtenances. We have been told of the grand destiny of our great Republic; and of the admirably made-up citizens, *in posse*, that stood waiting to step into its high places and its fat offices. We have been pointed to the triumphs of art and intelligence; and the last cadenza in the psalm always fell gracefully on the brow of the genius of our common schools. To be sure, we have left off the nomadic life of our ancestors, and no longer, as a rule, drive our women, like them, to the field. To be sure, we are not Tartars nor Timboos; but is there not something more? Do none of our young men and maidens go out from the very rose-blush of existence into the still grave? Do so few of the living foolishly prefer vice to virtue, dishonesty to staunch integrity, the bankruptcy of their own purity and power to an unsullied name and a noble success, that it is no longer worth our while to seek after higher steps in the problem of youthful training and development? If we have been dreaming, let us awake and look at a few realities.

"We need not name again the unfortunate teacher in this city whose rash good intentions opened the way for a series of developments that might well startle our eulogists from their propriety. *That name* is no longer a *proper*, but a *common noun*—the title of a class, it seems, but too largely represented among us. In a fortunate hour—fortunate in the end for our school system, we mean—a blundering letter to the New-York Tribune, and a savage editorial retort, tore aside the veil, and scores of snug incompetents stood, as they did not count on being, exposed. The country was aroused; and, for a part, at least, it has answered the question. Who are our educators?

"We have suddenly learned, what we ought to have known before, if we had but remembered how among us nepotism lords it over fitness, and how the quality of all our purchases is regulated by the price we are willing to pay—that scores of our teachers, in schools, low, high, and highest, are ignorant of the commonest degree of accurate acquaintance with their mother tongue, are unskilled and boorish, and in the most charitable view, wholly incompetent and grossly unfit to stand in the places into which they have smuggled themselves. Nay, we learn of some who enter their schools drunken and offensive. School officers in this city are found to carry this peculiar class of qualifications a point further. They repay the distinguished generosity of the artists, Thalberg and D'Angri, with a presentation ceremony interlarded with hiccoughs, bombast and stupid leers. The picture is humiliating. But the committee of teachers crown the scene by substituting for a chaste and heartfelt expression of thanks, a sophomoric display of vapid rhetoric and spoiled theology.

"It even comes out that the commonest elements of genteel culture are in decay among us. There are fewer gentlemen, business men, correspondents of all kinds, who write well-spelled, fairly-constructed, and properly-punctuated epistles, than formerly. Collegiate professors indite awkward botches; un-"*courteous*"-ly styling themselves "professors," and bewailing their "*salery*." Government officials everywhere among us suffer under the same inconveniences; but many of these think their syntactical trespasses venial—they have been so absorbed in active pursuits (of *Government pay!*), that they have had no time since they arrived at manhood for self-cultivation; thus tacitly admitting that the boy's schooling is not expected to accomplish what it pretends to. AND IT DOES NOT; the proofs throng on us on every hand. Even well-meaning men actually came forward lately and palliated the blunders in spelling and grammatical construction of the *first teacher in one of the highest institutions of the greatest city in our country!* They said his letter was written "in haste;" it was "respectful," even if misspelled: and a revision" would probably have called the writer's attention to its errors! We take the position, simply, that no man who needs to revise the orthography or obvious syntactical relations even of what he writes in haste and under

the pressure of circumstances, was ever fit to have reached so high a position. The unfitness that can indite such blunders is *radical*, and no accidental or temporary haze of the judgment; and this fact forms the real condemnation of the party in question. One generous soul even descends this delinquency on the score of his "having been so long a teacher!" So might a case-hardened rogue excuse his peccadilloes by pleading that he had so long been dependent on his peculiar line of business for a livelihood.

"One fact more. our colleges are founded and sustained at an immense outlay of time, labor, and money; they are upheld in many cases by liberal endowments, or by frequent donations; they are provided with libraries, cabinets, apparatus; they are stocked with instructors, of whom, if some are bogglers, others are among the first literary and scientific names in our country. What, now, is the fruit of this great outlay? Why, that *five-sixths* of all the present attendants on these seats of learning look upon college life chiefly in the light of a "jolly good time," had at the expense of somebody other than themselves—that they smoke, drink, ride, and trust to the luck of impudence, and the aid of a "pony" to get safely through their recitations, and for their degree to the influence of their *house*, or the tacit understanding that the payment of their money and the serving of their time entitles them in due process to graduation. These hopeful scions manducate peanuts in the class-room, and look upon the "common branches" with hearty contempt. But question them, and you find that while they have not the most distant conception of the course of study and thought that marks a high intellectual career, they are equally guiltless of an acquaintance with the spelling or construction of their own language, the indispensable elementary truths of science, or with history, polity, or letters of their own or preceding times. "I declare," said a smooth-checked *junior*, of nineteen, in our hearing the other day, "it makes little difference whether the fellows study or not; they all seem to graduate." He had himself prepared for college in *two years*, and then entered *two years in absence!*

"Thus we have pointed to some of the *evils* of our existing schools and scholastic methods. They are no light matters; but deserving of reflection and action. If we speak of *causes* or *remedies*, it must be at a future time."

—A late official *Gazette* contains an announcement of the qualifications required from applicants for public employments:—To write a good hand; to spell correctly; to write grammatically; to write correctly from dictation; to be conversant with the elementary rules of Arithmetic. To enable the board to judge for what branch of the Public Service any candidate is best qualified, he may be examined, should he desire it, in the following subjects or any one or more of them which he may select: Translating English into French or French into English, and writing from dictation in either language; Arithmetic as far as Decimal Fractions; book-keeping; Elementary Geography; making abstracts of documents. Two referees will be required to answer the following question, viz. Are you related to the Candidate, if so, what is the relationship? Are you well acquainted with the Candidate? From what circumstance does your knowledge of him arise? How long have you known him? Is he strictly honest, sober, intelligent and diligent? What do you know of his education and acquisitions? So far as you can judge, is his character in all respects such as to qualify him for public employment?

—During the recent meeting of the American Association, at Montreal, the writer had an opportunity, through the courtesy of the Chief Superintendent of Education and his principal officers, of visiting the Lower Canada Education Office, and McGill Normal and Model Schools. The offices of the department, in the old government house, are handsomely fitted up and in admirable working order. The council room and library are also appropriately furnished. The library contains a very valuable collection of neatly bound French and English Educational works of reference, and a selection of works in general literature, etc. The Jacques Cartier Normal and Model Schools are attached to the Education Office Building, and are fitted up and furnished in the same manner as are the corresponding schools in Upper Canada. Every thing indicated the zeal and ability with which the department is managed.—A visit to Quebec, also, furnished an opportunity, through the kindness of Rev. Mr. Horan and the Ecclesiastics of the Seminary, of seeing the Laval Normal and Model Schools, and the Laval University. The visit to these institutions was a highly gratifying one. The arrangements of the Jacques Cartier Schools are excellent, and in one or two respects superior to our own. The Laval University, with its new and extensive additional buildings, its valuable library, interesting Museum, laboratory, and beautiful collection of philosophical instruments, is admirably adapted to promote the cause of higher education in Lower Canada.—(*Upper Canada Journal of Education.*)

—On the 24th of September, the new Masson College at Terrebonne was inaugurated. It is a substantial cut stone building, four stories high and 136 feet front. A handsome brick building prepared for the classes of the college of Varennes in the county of Verchères was also inaugurated on the 4th of October. His Lordship the R. C. Bishop of Montreal was present at the first mentioned ceremony and His Lordship Bishop Larocque was present at the latter. The Hon. Mr. Cartier, member for the county of Verchères and the Hon. Mr. Chauveau, Superintendent of Education,

addressed the meeting. The Superintendent was also present at the inauguration of the Masson College. This handsome and lofty building is chiefly erected at the expense of Madame Masson, widow of the late Honorable Joseph Masson.

—A Boy's Academy has been opened at Baie Saint Paul, county of Charlevoix. Mr. Amouroux, formerly of the College of Rimouski is the principal.

—C. Magill, B. A., formerly of Lennoxville College, has been appointed Professor of English and classical literature at St. Francis College, Richmond. This college was erected by the subscriptions of the merchants, mechanics and farmers of that and of the adjacent villages. It is a large and handsome brick building, in a commanding site near the depot of the Grand-Trunk Railway, midway between Quebec and Montreal.

—We find the following receipts for making black boards in an exchange, and very gladly transfer them to our columns:

For twenty square yards of wall, take three pecks of mason's putty (white finish), three pecks of clean line sand, three pecks of ground plaster, and three pounds of lamp-black, mixed with three gallons of alcohol. Lay the mixture evenly and smoothly on the surface to be covered. *Note*.—The alcohol and lamp-black must be well mixed together before they are mixed with the other ingredients.

Another.—To 100 lbs. of common mortar, add 25 lbs. of calcined plaster; to this add twelve papers, of the largest size, of lamp-black. This is to be put on as a skim coat, one-sixth of an inch thick on rough plastering, after it has been thoroughly raked and prepared. This should be covered with a coat of paint, made in the following manner: To one quart of spirits add one gill of boiled oil, to this add one of the largest papers of lamp-black, after it has been thoroughly mixed with spirits. To this add one pound of the finest flour of emery. This paint may be also put on boards or canvass. This should be constantly stirred when used, to prevent the emery from settling. If too much oil, or if any varnish be used, the board will become more or less glazed, and unfit for use. Some prefer to have the board behind the teacher green or bronze, which is more grateful to the eye. This can be done by using chrome green instead of lamp-black. None but the very finest flour of emery should be used. Some prefer pulverized pumice-stone to emery.

LITERARY INTELLIGENCE.

—It is proposed to publish a new English Dictionary under the auspices of the Philological Society. The Dean of Westminster (C. Trench), F. J. Furnivall, Esq., and Herbert Coleridge, Esq., members of the Council of the Society, are named as a Committee to make arrangements for the work. The deficiencies of the standard works, as vocabularies of the language, and as philological guides, being admitted, it is hoped that a more worthy *Lexicon totius Anglicitatis* may be had. The discovery of words and phrases is to be primarily sought from the less read authors of the sixteenth and seventeenth centuries. The older writers, such as Chaucer, Robert of Gloucester, and the still earlier or contemporary ballads and romances, have been already sufficiently searched, and their peculiarities of language recorded in the works of Wright, Halliwell, &c. But it is otherwise with the writings of Roger Ascham, Philemon Holland, the translator of Livy, Plutarch, Pliny, and other classics, Henry More, Ogyly, Quarles, Shelton, the translator of Don Quixote, Hackluyt, and many others that might be named. A number of English words and phrases in the works of such writers do not appear anywhere else, and it is proposed that they should now be collected and inserted. The results of the labours of those who are willing to co-operate in the work are requested to be sent to the Secretary of the Committee, Herbert Coleridge Esq., No. 10, Chester Place, Regent's Park, London, N. W., before the first of November, so that a report may be drawn up of the probable result of the proposal. The following rules and directions for the guidance of collectors have been published:—

Rules and Directions for Collectors, as agreed upon by the Committee.

I. That only such words be registered as fall under one of the following classes:—(a) Words not to be found either in the latest edition of Todd's Johnson, or in Richardson.—(b) Words given in one or both of those dictionaries, but for which no authorities at all are there cited.—(c) Words given in one or both of these dictionaries, but for which only later authorities are there cited.—(d) Words used in a different sense from those given in the dictionaries mentioned.—(e) Words now obsolete, for which a later authority than any given in Johnson or Richardson can be cited.—(f) Forms of a word which mark its still imperfect naturalization (as for instance, *extasis* and *spectrum* instead of *ecstasy* and *spectre*, in Burton's 'Anat. of Mel.') where they have not hitherto been noticed.

II. That all idiomatic phrases and constructions which have been passed over by Johnson and Richardson be carefully noticed and recorded, the collector adding, if possible, one parallel instance from every other language in which he knows the idiom to exist. This rule is not intended to apply to mere grammatical and syntactical idioms.

III. That any quotation specially illustrative of the etymology, or first introduction, or meaning, of a word shall be cited.

IV. That in every case the passage in which the particular word or idiom is found shall be cited, and where any clauses are for brevity necessarily omitted, such omissions shall be designated by dots.

V. That the edition made use of shall be stated, and throughout adhered to, and that, in the references, page, chapter and section, and verse, where existing, shall be given.

VI. That the words registered shall be written only on one side of the paper (ordinary small quarto letter paper), and with sufficient space between each to allow of their being cut apart for sorting. N. B. It is particularly requested that this rule may be strictly observed.

—The statue of Madame de Sévigné has been inaugurated at Grignan and that of the great Irish poet Thomas Moore, made by his homonyme a sculptor, of London. M. Christopher Moore has also been inaugurated at Dublin. The Lord Lieutenant of Ireland, and the Mayor and Corporation of Dublin were present. The inaugural speech was delivered by Lord Charlemont. The band of the 1st Dragons was present and played some of Moore's melodies during the ceremony.

—M. Gustave Planché one of the best writers of the french Reviews and a distinguished hellenist, died recently in Paris.—France also lost Mr de Custine who wrote very interesting *mémoires* on Russia, was the son of the marquis de Custine, one of the generals of the republic, and who was sentenced to death under the convention, and had a most marvellous escape.

—Mrs. Speirs has published in London a work under the title of "Life in ancient Asia." This work says the *Illustrated London News* contains a searching analysis of the Vedas, Brahmanism and Buddhism. The old religious doctrine is skilfully unfolded. The reader is made acquainted with many of the most beautiful and ingeniously constructed poems of Oriental antiquity, rich in the marvellous and the fantastic, the heroic and the pathetic, and this portion of the work is rendered the more attractive by the masterly metrical translation of Mr. Griffiths. Some charming specimens are also given of Indian dramatic literature.

—Switzerland, like America, has no language of its own: four different languages are spoken, German, French, Italian and Roman, the last of which is an old patois composed of latin and french or rather the beginning of the decomposition of latin into french. The three first named are spoken in the meetings of the *département* or federal legislature. The population is divided as to language as follows. German 1,080,996, French 540,072, Italian 129,353, Roman, 42,439. Total 2,392,760.

SCIENTIFIO INTELLIGENCE.

—It has been discovered that sulphur spread on the leaves of the vine will destroy the *oidium* or vine-disease and the discovery has been followed up by successful action throughout France. Mr. Spuerchneider of Ratisbonne has found the cause of the potatoe disease and suggests the same remedy. It has been proved by a series of experiments that the disease had its origin in a microscopical parasite, which grows on the leaves of the plant (*fusisporium solani*). The way it reaches the potatoe is when the leaves are on the ground, it is imbibed by the earth and sticks to the tubercule which is soon rotten.

—The several railway companies in France are about to apply for signals on the way, the new *photo-electric* lamps of Messrs. Lacassagne and Thiers of Lyons. A very powerful light is thrown by those lamps to a very great distance notwithstanding fog. It is also proposed to adapt them to the trains, and greater security will thereby be obtained. This is a matter worth the attention of our Canadian railway authorities.

—A few weeks ago the public press of Germany congratulated Baron Humboldt on his attaining his 88th year. The author of *Cosmos* may be said to be the patriarch of science. His health, which, as our readers are aware, had been impaired, is improving. Notwithstanding his great age he works and writes constantly and goes to Paris every year. His popularity in France is as great as in Germany. He wrote several of his works originally in French, and has spent in Paris a great portion of his life.

—Mr. Rouland, minister of public instruction in France has offered by order of the Emperor to Professor Louis Agassiz of Cambridge, U. S., the chair of zoology at the Muséum of the *Jardin des Plantes*. In the very flattering letter which he wrote he expresses the hope that a man of so much talent and learning would thereby be induced to return to his native country. Mr. Agassiz in answer states that the studies he is pursuing on the structure of eggs and the oviparious animals, on the one hand and the ties which bind him to the United-States on the other, prevent him from accepting that which he considers one of the highest positions which a man of science can occupy. He adds that although he is of French descent, Switzerland is his native country and that he claims no other nationality.

—The first Austrian man-of-war intended to circumnavigate the world, the frigate Novara, left Trieste on the 30th of April, for Gibraltar. The Novara carries 1,500 tons weight and 30 guns; the deck is 147 feet long, and 42 in width. The vessel draws about 19 feet water. The Novara has 354 men on board, seven of whom belong to the scientific commission, and will principally be engaged in scientific pursuits. The astronomical, meteorological, and magnetical observations, however, will be made by the officers of the navy, under the command of Commodore Wallerstoff. Dr. Huchetetter, from the Geological Institution of the Austrian Empire, will be occupied with the geological and physical, Messrs. Fraunfele and Zeebor, with zoological, Drs. Schwarz and Tellinek, with botanical; and Dr. Scherzu with astrological and national-economical researches and investigations. The last of these gentlemen will also keep

the journal of the expedition, and make the reports on its progress and results to the different political and scientific authorities at home. The expedition is likewise accompanied by a renowned Austrian painter, M. Selliny, who will be occupied in illustrating the most interesting points visited by the Novara, and likewise make drawings for different scientific purposes. Alexander Von Humboldt honoured the expedition with a beautiful memoir on the volcanoes of the South Sea and the western coast of South America, which he called, in his modest style, physical and geognostical remembrances (*Physikalische und Geognostische Erinnerungen*.) This most beautifully written memoir had been addressed to the leader of the expedition, Commodore Wallerstoff, an excellent naval officer, who was formerly professor of astronomy at Venice, a man of excellent qualities, and a sincere love for science, whose appointment to the command of the expedition must be called an exceedingly fortunate one. The Novara is accompanied by the corvette Carolina, and will be towed as far as Messina or Strumboli, according to circumstances, by the steamer Lucia, Captain Littrow, an Austrian man-of-war. In Rio Janeiro, the corvette Carolina will leave the Novara, and probably visit the La Plata territory, while the Novara will take her course to the Cape of Good Hope, and to two remarkable little islands, St. Paul and Amsterdam, south-east from the Cape, lat. 38 deg. south, which are yet, in respect to their natural history, totally unknown.

ARTISTICAL INTELLIGENCE.

One of the last numbers of the *London News* contains a wood cut and a description of Romain's Canadian steam cultivator, which has been tried with great success in England. The first model of this new steam plough which is now the property of Mr. Crosskill of London was executed for the Paris exhibition of 1855, by Mr. Romain, with the aid of the Canadian exhibition Committee who had voted £800 for that purpose. Mr. Charles Romain (and not Romane) is a native of Quebec where his uncle held a prominent position in society several years ago.

—A great artistical and industrial exhibition has taken place at Berne, in Switzerland where the admirable products of that country in silk manufactures, embroideries, muslins, and jewellery have been represented by specimens of the greatest beauty. The *Illustration de Paris* in giving an account of this brilliant exposition, states that Switzerland is a country where manufactures have never been fostered by protective duties and that it is nevertheless unrivalled in many of its productions. For the beauty of the designs and the elegance of the workmanship the Swiss jewellery is not even surpassed by that of Paris. The halls of the exposition were decorated with innumerable specimens of the Flora and Fauna of the Alps and of all the birds and quadrupeds of that country stuffed and prepared and grouped so as to give the most correct idea of their habits, and the correspondent says that as Switzerland is the most picturesque of all countries, the Swiss exposition is the most picturesque and interesting exposition he has ever seen.

STATEMENT of monies paid by the Department of Education for Canada East, between the 1st January and the 31st October, 1857:—

Total amount paid to 30 September, 1857, as per statement published in <i>Journal of Education</i> , No. 7	£57,517 11 10
Paid from 1st to 31st October, 1857, viz:—	
On account of grant to common schools,	
1st half year of 1857, £ 540 4 9	
" Normal Schools,	1389 0 2
" Superannuated teachers pensions,	38 13 9
" Salaries of Officers of Department,	567 3 9
" Salaries of Inspectors,	1085 18 0
" Departmental Library,	7 16 0
" Books for prizes,	142 18 8
" Journal of Education,	174 5 0
" Contingencies,	151 16 4
	4,097 17 2
	£61,615 9 0

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