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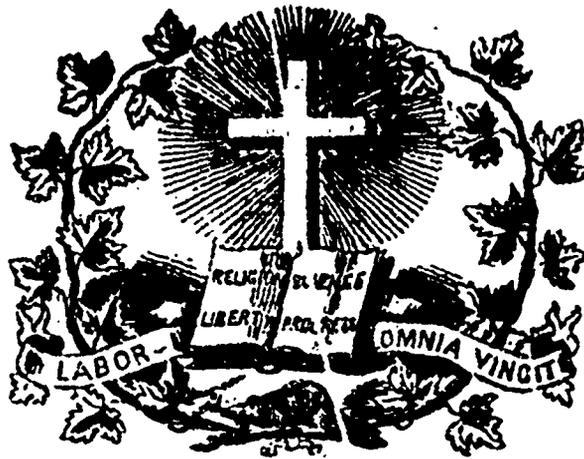
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SUMMARY.—**PEDAGOGY:** The Power and Influence of the Teacher.—English Composition, (continued).—What a Teacher should, and what he should not do.—A Few Hints on the Education of Daughters, by a Lady.—**OFFICIAL NOTICES.**—Diplomas granted by the Boards of Examiners.—**EDITORIAL:** To Patrons and Readers.—Causes of the Emperor Augustus in the Blackas Collection, British Museum.—**MONTHLY SUMMARY:** Educational Intelligence.—Scientific Intelligence.—Neurological Intelligence.—Meteorological Intelligence.—Miscellaneous Intelligence.

PEDAGOGY.

The Power and Influence of the Teacher.

ILLUSTRATED BY EXAMPLES.

There is probably no man who will be held to a stricter account for the use of his talents and opportunities than the teacher. This is because few men have less temptation to do wrong, and none have their duties more accurately defined. The teacher is not a child. His duties lie in one special province. His influence is most powerful, and his example is before the eyes of all his pupils. To them he is a wonderful man. Although we are a very democratic people, and our boys are men, in their own opinion, when they put pantaloon on, yet it is true to-day as in the days of Goldsmith,—

And still they gazed, and still the wonder grew,
That one small head could carry all he knew.

This power of teaching and example is one of surpassing influence, and in ways which are sometimes not imagined by the teacher himself. It is not by mere teaching—it is not by example only—it is not only personal conduct; but oftentimes the manners, and oftener what may be called the genius of the man, not of the intellect or learning, but of the *spirit* which dwells in his form. Hence it is that some persons are particularly adapted to be teachers, and others ought not to be teachers at all. The fiery old John Adams was a teacher, and we can well imagine that his pupils must have been fit for the Revolution. Salmon P. Chase, the Chief Justice, was a teacher; but we fancy his pupils were taught more of dignity, and staidness, and law-abiding, than the boys who came from the school of revolutionary Adams. It has happened to us to know something of many distinguished teachers, and as we recently wrote something on the value of oral teaching, we shall now give a few practical examples.

Albert Pickett, a name memorable among teachers, told us that when a boy he went to an academy in New York, I think, and was taught by a master who was one of those men who make their mark by force of character. He mentioned several distinguished men, among whom, I think, were Irving, Paulding, and Verplanck. At any rate, he named a number of men who, in after years, made a large part of the literary men of New York, who went with him, or near his time, to that school. Now, there were members of other academies and schools in New York—but where are the results? Thousands of practical business men no doubt came from them,—but where is the fire-lit flame of genius? Now, how came this about? The natural world furnishes analogies for many things in our social constitution. The flint gives fire, but not till the iron strikes it. Now, the boys who come to school, however much they may rollick and play and talk, are spiritually as dull, as hard and sparkless, as that flint. They will make good, hard pavements for the world's use—and that is what most of them do. But where is this hidden fire? Where is the lightning which the flint holds? The truth is, that fire will never come out till something shall strike it like iron, and bring forth its sparkling flash. The Scripture says that as iron sharpeneth iron, so does the countenance of a friend his friend. The lightning of the soul, like that of the clouds, comes forth by contact. Now, after the mother, the teacher is the first being in this world who really comes in contact with the young mind. When that happens, it may result in two modes of contact. One is, the usual mode, in which the minds of teacher and pupil move on together, without striking, in a sort of intellectual parallelism. The teacher sets something for the child to do, and gives a rule by which it is to be done. This is no strike and no impulse on the young mind. If he understands the rule, and has common sense, he will do it, and in time, by diligence, learn the "three R's"; nay, he will even learn what a verb and noun is, and that a verb governs a noun, but will never know what governing is, nor what, in the world of nature, is the relation of verbs, nouns, and adjectives. We perceive, then, that if the boy is ever to be more than a ploughman or shopman (good enough trades), he must be struck by something which will bring out the fire. Now, the teacher won't do this unless he does two things: first teaches the *reason* of things, and then excites the child or youth by stating an idea or a thought which is new and striking. But we need not dwell on this; for here the *tact* of the teacher is greater than his talent. Let us take some other examples.

For more than thirty years, my father was a teacher in various grades of school and academy, and at West Point. At one time, in New Haven, he taught mathematics and navigation to fit young men to be captains and mates of ships,—for our country being then confined to the Atlantic seaboard, the sea-faring business was one of the principal trades or vocations of the people. Many of his pupils became distinguished in their profession; and years after, we had in the family handsome presents which the gratitude of those young men had given to their old teacher. This was what may be called *prima facie* evidence that his teaching was not only useful, but had touched the spirits of his pupils. At another time, he taught a classical academy, and among those taught by him were several men who came to the highest stations in the United States Government, and his influence with them was so great that he really accomplished more with the Government than the most distinguished politicians. The power of the teacher, we see in this, was not confined to the mere school, nor to the mere business of teaching, but went home to the hearts of his pupils, and remained a power in his hands when these youth became the men of station, and renown, and influence in the land.

Let us now take examples from some other early teachers. I can take no better or more striking than those who were my teachers, and they were few in number. We lived on Mill Creek just previous to the War of 1812-15, and I had just one quarter's schooling before I was eleven years of age. It was in a log school house on the banks of Mill Creek. It was a memorable time; but I shall only speak of the schoolmaster. Two things only I remember specially of him. The first was, that he was great on *spelling*. We had the modern practice of spelling fights, spelling in competition, and for the head of the class. At the end of the quarter, I was head of the class in spelling; and *strange as it may seem, such was the influence of my mother and of this teacher that I have rarely since looked in an English dictionary*. In thirty years, I have scarcely looked as many times in a dictionary. This, however, was the result of much reading which gave the knowledge of words. But, I think, the teacher, whose speciality was this humble part of education, had an influence which perhaps brighter and wiser people did not have. But one thing I must mention to mark the manner of the times. On quarter day we were marched (I at the head) to the neighboring tavern, and treated to cherry bounce! Now, cherry bounce is a pretty strong article, and my head rang again. I have never been treated since at school to a tavern drink; but I have no doubt the old fashioned teacher thought it was a very innocent affair. But suppose some of those boys had an aptitude for strong drink, what an influence must such an example have exerted on their after lives!

A year after this, I went to school in New Haven, to a teacher who was an intemperate man, but who was crowded with boys. He was a disciplinarian of the old school. I saw him tie up a boy and horsewhip him, and it did no good. That man struck the backs of his boys, but never struck a single idea from their minds. Again, I was at school at quite a celebrated academy—the Episcopal Academy at Cheshire, Connecticut. The principal of this institution was emphatically, *dum vivimus vivamus*—live whilst you live. The boys and the teacher alike agreed in taking the world easy. We had regular recitations each day, but we got over them in the most slipshod way. I was there only six months, but I am unable to recall any ideas I got there. It was spring and summer, and I spent much of my time in making hay, picking blackberries, and chasing pigs. When this got to the ears of my mother, as it did, she soon made her appearance on the stage, with my father, and the bills were paid and “her boy” taken away. I have not heard that Cheshire Academy is renowned for distinguished *alumni*. A lazy human being is a contemptible object—but a lazy teacher is worse than contemptible. He is bad. *Time* is the most valuable thing we have in this world. It is the only capital we have, with which to use and apply our talents. Hence a teacher had better, if he can do

nothing else, teach his pupils a single thing—such as spelling, for example,—and teach him that rightly, than to suffer him to go over every day a set of slipshod lessons, without giving him one idea to redeem time from total loss.

Another example of a totally different teacher was Professor Crozet at West Point. Claude Crozet had been educated at the Polytechnique School, and was a Captain of Engineers in the last great campaign of Napoleon. Taken prisoner by the Russians, he returned to France, and remained till Waterloo closed the brilliant career of Napoleon in 1815. The Government of this country was then attempting to remodel and revive West Point, so as to make it efficient in the education of young men for the national service. America was then young, and deficient in teachers of the exact sciences. Crozet was appointed Professor of Engineering at West Point. Engineering is the practical result of the exact sciences, and presupposes a pupil taught in these subjects. Crozet came to West Point knowing little or nothing of English, and he was astonished to find himself a teacher of pupils who had no ground work for his science. They had studied algebra, geometry, trigonometry, perhaps mechanics and philosophy; but what knew they of descriptive geometry—a perfectly unknown quantity in America; what of topographical drawing, without which we cannot teach engineering? Here was a dilemma: a Professor of Engineering without the English tongue, and pupils without the elements of engineering! But Crozet was indomitable. He had fought the Russians with Napoleon, and was not to be frightened by American boys. So he got out his Polytechnique drawings, and put a blackboard and chalk in the middle of the room. On the blackboard he drew the figures of descriptive geometry, and on the table he put the drawings of the Polytechnique. There was *not a book* in that room which could give the pupil a fact or a thought. There was no stealing; for there was nothing to steal from. In regard to what we had to do, we stood in mother's nakedness, and had nothing to rely on but ourselves. The way we looked astonished, the way the professor stood aghast, the way we laughed together, and the way we went to work, would have been perfectly astounding to some of our modern teachers who think they must have a book full of cuts and explanations, and glossaries and questions, or they can do nothing. By the way, the first cuts I ever saw were in Webster's spelling-book, which was first issued nearly sixty years ago. In the fable of the boy up the apple tree was a cut illustrating the little chap. There was another one (I forget what it was about) with a big bear in it. We had cuts enough with Professor Crozet, but they were cuts of hard mathematics—drawings of problems and fortifications. So Professor Crozet began his work at West Point—and it was a work which tells on the Nation's history. Never have better engineers or better mathematicians been educated in any nation, and never were stronger minds educated for their country's service. The mere routine of West Point I do not value very highly; but the thorough teaching and the thorough discipline are invaluable. Nothing in this country, perhaps in no country, equals it.

We can not and we ought not to educate our American youth in the manner of the Prussians. In Prussia men must pursue specific vocations. Everything runs in grooves, and everything must run in grooves. But in America every man is free to pursue any course under the sun which he chooses, and American youth must have free teachers. They must use their minds freely, and they must draw out their boys and girls in free paths, giving them general strength and freedom rather than specific vocations. The teacher who can do this becomes immortal in the immortal minds of his pupils, and honorable in the history of his country.—*Ohio Educational Monthly*.

E. D. M.

English Composition.

(Continued from our last.)

The external condition of all culture, corresponding to this internal condition, is equally ignored and disregarded. This external condition prescribes that the pupil be guided by the teacher to the practice which the particular art involves. The pupil must be put on doing, and know from his teacher precisely what he is to do. There must be practice, and there must be instruction, rule, to guide that practice. This instruction and rule may be procured, indeed, from books as well as from the lips of the teacher. The text-book may be more or less in place of teacher. But the instruction, the rule must be given, or there must be blind groping, stumbling, failure, on the part of the learner.

The combination of these two conditions directs at once to the only method of teaching that can promise success;—that the pupil be led along, step by step, in clear instruction and firm guidance, practicing element after element in the art until each successively be mastered, from the simplest on to the most complicated procedures in the art. In this way, other arts, arithmetic, music, are now most successfully taught. In this way composition may be taught with equal success and with equal satisfaction to both teacher and learner.

We proceed now to indicate in detail how this tried and accepted method may be applied to the teaching of composition.

There are two very distinguishable stages in the acquisition of an art which a wise method will ever broadly discriminate. There is, first, the elemental stage. In arithmetic, it embraces what are called the ground rule—those of addition, subtraction, multiplication, and division, with the introductory rule of notation. In composition this stage embraces the rules of sentence construction proper, with the introductory rules corresponding exactly to those of arithmetical notation, of capitalizing, punctuation, and paragraphing. This elemental stage is covered by the science of grammar, as it is ordinarily understood. The second stage embraces the various general processes in which these elemental processes are applied to some proposed object. Thus in arithmetic, we have the rules of proportion, evolution involution, reduction of fractions, and the like. In composition we have the rules of discourse proper, which are embraced in more or less perfect form in our familiar rhetorical treatises.

Now as in learning arithmetic, the pupil should first be put upon learning the ground-rules, after beginning with some rudimentary study of notation, and should learn successively each rule by itself, so in learning to speak and write he should begin with the rudimental principles of rhetorical notation, so to call it, embracing capitalizing, punctuation, and paragraphing, and then learn separately and successively the several parts of sentence-construction proper. And here experience prompts the remark that two or three thoroughly taught lessons in these rules of rhetorical notation, at the very beginning, will save teacher and pupil incalculable trouble in the further practice of writing, as well as be of inestimable service in working into the mind of the pupil that most vital condition of successful writing—the idea of a progress by stages in all correct discourse.

With the rudiments of what may figuratively be called rhetorical notation—of capitalizing, punctuation, and paragraphing,—familarly and thoroughly mastered, the pupil is prepared to begin upon the simplest element in sentence-construction.

But here it becomes necessary to take up and carry with us a correct and also a clear notion of what sentence-construction is—of what we do when we construct a sentence, in order to determine what is the first and simplest element, and what are the successive more complicated elements in their proper order, and also in order to determine how we are to deal with each. When we construct a sentence then we put a thought into appropriate words, as in constructing discourse we put thought into words for some proposed rational object. We have then in all composition two elements to deal with—the thought and the word—and of these elements, the thought is the important element, the vital,

the properly organic element. We use the word but for the thought's sake. Nay, the thought has determined the shape and character of the word itself, the particular thought-form has created and shaped the particular word-form. To teach composition, to teach sentence construction by limiting the views of the learner to the word, while excluding or even relatively depressing the thought, is preposterous, is fatal, as much so as it would be to teach arithmetic in such a way as to make the pupil think that figure-making is all there is in ciphering. The quantity denoted by the figure, the thought expressed in the word, must ever be kept prominent, and be treated as the vital and organic element. The pupil must first understand what he is to express, what he is to say or write, then seek for the proper mode of expression. In other words, in any true method of learning composition, the thought-form must first be studied, then the word-form which language has provided for the embodiment or expression of that thought-form.

Beginning with the most elemental thought-form, the pupil should be conducted step by step successively through each of the great elemental thought-forms as they are now presented to us in our more matured system of Logic, with their various modifications so far at least as they determine peculiar forms of words, and in such a way that he shall attain a familiar practical mastery of those elemental forms of thought in connection with those word-forms which language has appropriated to each respectively. Logic has now given us the exact enumeration of these general thought forms. It is now practicable, consequently, to found all the forms of word-expression as given us in grammar in their proper thought-forms, and thus to present the whole subject of sentence-construction in the clearest exactest scientific method. Not only this, but the recent advances in logical science enable us to account for the rise of the particular word-forms which it is the province of grammar to enumerate and explain, and to set forth the reasons why these forms of words, these parts of speech, are such as they are and not different. In short, in the light which is now shed upon the nature and forms of our thinking, grammatical science is enabled to unfold all its principles and explain all its forms by a clear reference to the nature of the thought which underlies and determines, or to speak more significantly, which organizes all language.

It is pertinent here to introduce a word or two in reference to the proper relation of the study of grammar to training in composition-writing. Our systems of grammar are all *sciences* of language, not proper *arts*. A proper art aims definitely at *doing*, *producing*, *constructing* something. Its characteristic method is the synthetic, the constructive method. It fastens on the essential faculty concerned in the art, as for instance, the faculty of song, the faculty of computation, the faculty of thinking, the faculty of discoursing, or the like, and develops that faculty by appropriate practice in successive processes involved in the art, proceeding from the more elemental to the more complicated. A science aims at explaining, informing, enlightening, the intelligence. Its characteristic method is the analytic. It fastens upon the product, the result, and separating it into convenient parts, explains the nature or describes the elements of each of these parts successively. Our grammatical treatises, thus, take language as a product, a result. They dissect it into its parts and treat distinctly of sentences, their kinds and characters, of parts of speech, their number, characteristics, modifications, and the like.

Now such grammars, such scientific treatises on language, are doubtless very useful and very valuable. Language, as the product of the legitimate workings of the human mind, of the proper rational life, is as worthy of scientific study as are fruits, or foliage, or the products of vegetable life. So grammars of particular languages, grammars of the Greek, of the Latin, of any foreign language, where not the use of the language in speaking or writing but a mere knowledge of it is chiefly aimed at, are of inestimable value and worth. But although unquestionably

valuable auxiliaries to a correct and facile use of a language in actual conversation or discourse, they never suffice to this end. Probably few amongst our best scholars would venture writing or speaking in a foreign dialect of which they might have attained the completest mastery as to its characters and forms, unless after a special training. From the very nature of the case we should anticipate such a result from the study of grammar as a science and not as an art, as was at a recent state convention of teachers acknowledged by one of the body in his somewhat paradoxical statement that "no man or woman ever learned to speak or write the English language from the instruction he or she received in grammar in school: it can not be done." That the study of grammar as generally taught has some utility, it is unreasonable to doubt. It gives at least some knowledge of the nature of language. But it would be quite as unreasonable to expect from such a study the attainment of much power or skill in the use of the language—in speaking or writing it—in the construction of discourse.

It will not probably be denied by any that the great end in studying every vernacular language should be to acquire the power to use the language correctly and effectively. This is not the end generally proposed in studying foreign languages; especially is it not the commanding end in the study of the Greek and the Latin languages. The grammars of these languages have not been constructed with reference to that end, but almost exclusively with reference to the power of interpreting the literature of the Greeks and the Romans, not to skill of authorship in these languages. But these grammars of the classical tongues have been the models and patterns after which our vernacular grammars have been designed and elaborated. They are, accordingly, sciences of the language, not arts. But what is most needed in the study of the English language with us and especially in our public schools and seminaries is that which is properly to be taught as an *art* of English discourse, and the whole procedure in the construction of a suitable text-book should be the reverse of that in a science—the reverse of that adopted in our classical grammars. It should be, as already indicated, in the synthetic method, proceeding from element to element in systematic order, with suitable practice on each in succession till it is thoroughly mastered for the use. The difference between the two modes may be well exemplified in the study of arithmetic as a science or as an art. Let a pupil study arithmetic as a proper science, — in the form, for instance, in which it is unfolded in the publications of the Society for the diffusion of useful knowledge; let him perfectly master every principle and understand every doctrine thoroughly of arithmetical science as there so ably set forth. He would not yet be able to solve a very slightly complicated problem in Proportion with all such scientific knowledge. A skill a tact is requisite which no mere scientific knowledge can impart. He might understand all the principles of computation, and yet not be able to compute so as to compete with any school-boy.

It is still true that a good practical arithmetician ought to understand the science that underlies his art, and, in like manner, the student in composition ought to understand grammar as a science—ought to be versed in the principles of the language. English grammar ought then to be taught in all our schools as a true art—as an art constructed on truly scientific grounds, but shaped and developed throughout, not as a science but as an art, just as arithmetic is in fact. It should be learned in learning to compose. In fact, a true art of composition is nothing but grammar regarded as an art. In this way of learning, not only would what should be the great commanding end in the study of grammar, viz: skill in speaking and writing, be best attained; but in connection with this, the science itself of the language, which is all that is proposed in our ordinary grammatical treatises, would also be acquired. Moreover, the study itself, instead of being as now a disgust and a drudgery, would be made most attractive and interesting, because its utility would be seen in every step of the study; and likewise, the grounds and reasons

for all grammatical teachings would be brought into clear light. Pursued scientifically, that is analytically and from the word-form, the study must ever remain dry and forbidding, and therefore comparatively unprofitable to the immature mind, unequal to scientific speculations. Pursued as an art from the thought as the organic principle of language, all becomes clear the developing mind moves on in sympathy with the developing art.

This, then, is the proper mode of teaching composition in its first stage of proper sentence-construction. After a suitable drilling in rhetorical notation—in capitalizing, punctuation and paragraphing,—the pupil should be exercised on each general form of thought successively in connection with the appropriate form of word which language has provided for that form of thought. He should be trained in suitable exercises copiously provided for the purpose, precisely as is done in our best arithmetics under each rule, on each leading modification of these general forms of thought with the particular word-form which language has for each. This will take him through all the principles—through the science of grammar, although skill, not mere knowledge, has been the one commanding aim in the study. He will have acquired, thus, not merely science, but what is incomparably more valuable, skill in thinking, skill in expression. His attention having been directed on the thought as the controlling element in speaking and writing, he will not only have received a most valuable training in the power to deal with thought, and a most valuable training in the command of verbal expression; but he will, in addition, have been led along a path in which he must have ever been constrained to look out understandingly upon the true relationship between thought and language. He will be in no danger of coming gradually to sink thought in words, to mistake learned terms, brilliant images, rounded periods for good writing;—in no danger of "growing in expression and dwindling in notion," to use the pithy language of Berkeley, as he is in the study of grammar and of rhetoric in the manner usually pursued. The thought to be expressed will be to him the main thing, and the verbal expression will be to him good or poor according as it well or ill embodies the thought to be expressed. He will relish criticism; he will understand and appreciate criticism, as he will have been trained ever to be looking for the appropriate verbal embodiment of the thought.

The second grand stage in the art of composing is that in which the rational object for which we speak or write comes in for distinct and prominent treatment. The pupil has now passed the proper elemental stage—the stage analogous to that covered by the four ground rules of arithmetic; he is supposed to have mastered by sufficient practice on each elementary process the entire art of sentence-construction. He is now to be trained in the art of constructing discourse, which employs the rules of sentence construction as Proportion and Evolution employ the four ground rules of arithmetic. Now in discourse, as in arithmetical computation, there are divers specific objects to be accomplished and there are accordingly divers processes to be used in accomplishing these objects. The pupil, then, is first to have the idea of an object in his writing fixed firmly and controllingly in his mind. This is vital. It is chiefly because no distinct object is before his mind in writing compositions as prescribed in our schools and colleges, that exercises are to the learner so repulsive and so unprofitable. Nothing is more repulsive to a rational spirit than an objectless task. The same exercise that without conscious object would be the most disgusting drudgery will be prosecuted with bounding enthusiasm when inspired by an apprehended object in it. A single fact will illustrate this general remark. In one of our leading colleges, a student, otherwise faithful and exemplary, as well as highly successful in his studies from his invincible repugnance to composition-writing, had worked up to his third year, shirking every exercise assigned to him. At last, after repeated censures, the alternative had to be met of performance or dismissal. He told his class-officer that painful as it was the latter must be his fate, for to write a com-

position was to him an utter impossibility. He was told to go out on a walk for a half hour; to note prominent objects and occurrences along his way; and then to go to his room and put down on paper a narrative of what he had noticed in just the order he had observed them, and just as they had impressed him. He complied. He brought the written narrative to his instructor. It was an acceptable performance of the task assigned. The fatal charm was now broken. To write a composition was to narrate—to communicate one's own thoughts to another. He became conscious of an object—a rational aim in writing. He soon rose to become one of the best writers in his class; and his name now ranks among the highest in American literature.

To narrate is one of the several processes determined by one of the several objects for which we speak or write—for which we construct discourse. But it is only one of the processes. Description is another as widely different from Narration as Reduction of Fractions is from Involution. To confound the methods in these two processes would be as fatal as it would be to confound the methods in the two arithmetical processes just instanced. There are other processes still, which are now enumerated and explained with exactest logical accuracy and completeness. There is no lack of means, therefore, within the reach of the faithful teacher of composition for conducting his pupil along the straightest course of methodical training from one process to another, and prescribing to him appropriate and copious exercises on each. There is no art, perhaps, which admits of a higher degree than this very art of composing than the art of discourse, of an exact scientific, progressive method of training. And as thus taught, composing ceases to be repulsive. It becomes positively interesting and inviting to every generous mind.

As in the first stage, the proper grammatical stage, we found the two elements—the form of the thought and the form of the word,—and as we began with the thought as the organic element, and then sought the appropriate verbal expression, so in the second stage—the rhetorical stage—we must begin with the thought as now determined and shaped by the particular object in writing. That is to be analyzed into its general forms so as to guide to the several processes which respect the management of the thought. After these several processes are mastered in sufficient practice on each successively, should come the proper study of the verbal expression—of style with suitable exercises in its several departments separately and successively.

In the way thus generally pointed, the acquisition of skill in speaking and writing becomes a clearly practicable, almost certain result, as it is seen to be by a rational procedure throughout, each successive step being simple and practicable, and each leading steadily to the proposed object—a ready command of thought and of correct expression for rational discourse.—*Amer. Journal of Education.*

What a Teacher Should Do.

Thoroughly understand what he attempts to teach; prepare *himself* for each lesson assigned; require *prompt* and *accurate* recitation; assign short lessons; banish all books at recitation except in reading; call on pupils promiscuously: ask two questions out of the book for every one in it; teach both by precept and example; manifest an active interest in the studies of his pupils; make the schoolroom cheerful and attractive; he should be courteous in language and action; cultivate a pleasant countenance; require prompt and *exact* obedience; *insist* upon *attention* from the whole class; make *few*, if any rules; avoid governing too much; let his pupils understand that he *means* what he *says*; visit the parents of the pupils; encourage parents to visit the school; visit the schools of others; subscribe for some educational journal; attend teachers' associations and institutes; he should dignify and elevate his profession by his personal worth, as well as by his skill and scholarship.

What a Teacher Should Not Do.

Never talk much nor loud; never promise what he cannot perform; never threaten for *anticipated* offenses; never be hasty in word or action; never punish when angry; never speak in a scolding, fretful manner; never be late at school; never tell a pupil to do a thing, unless convinced he can do it; never yield anything to a pupil, because he looks angry; never tell a child what you can make him tell you; never use a hard word when an easy one will answer as well; never allow tale-bearing; never magnify small offences; never believe all you hear; never assign long lessons.

A Few Hints on the Education of Daughters.

BY A LADY.

It is generally allowed that education has been more systematically and thoroughly carried out in the present century than at any former period of our history as a nation. Not only is it more generally diffused among all ranks of society; but in each and all of these it embraces a greater variety of subjects; our children learn more, and the things they do learn are communicated to them in a more interesting manner than in former times.

When I use the word *Education*, I do not at present allude to that higher *leading out* of the whole man, which embraces his moral and spiritual training, as an immortal being.

It is on education, chiefly as an intellectual training, that I wish now to address a few remarks to parents. Excellent as the present enlarged system of tuition may be as the foundation of that broader and deeper education which goes on through life, its efficiency as a means of mental culture will depend upon the manner in which the foundation is laid in early years, and upon it in after life. In the case of boys, its advantages are more apparent than with regard to girls. The variety of subjects for future investigation to which they are introduced at school, opens their minds, and naturally disposes them to examine further into each branch of study as it is placed before them, especially into those channels to which their natural tastes, talents, or destination in life may direct them. Those who can afford to be of no profession, but who may pursue science or literature from the pure love of knowledge, will necessarily find their minds better prepared for the cultivation of such pursuits, than if they had merely been well drilled in Latin and Greek grammar, like school-boys in former years. In the case of girls, however, it is not so evident that good results will follow from the more varied and elaborate elementary teaching to which they are now subjected in our public classes or private schools. In proportion as the prescribed number of years usually allotted to a girl's education must, according to the present system, embrace double the number of subjects deemed necessary for a well educated lady in the last century, the time and attention she can devote to each will be diminished; and, unless she herself, or her parents at home, follow up the school instruction which she is receiving, with a course of careful private study, the probability is, that she will enter upon the duties of mature womanhood not *better* prepared for them than our mothers and grandmothers were fifty or one hundred years ago, but in reality more deficient than they were in all womanly arts and attainments.

She may indeed have acquired a superficial acquaintance with the rudiments of several languages, and the terminology of various sciences, unknown to them; but, not having had time to advance beyond the mere threshold of universal knowledge, and having no innate love of study infused into her mind, she will naturally throw aside with her school books, all, or nearly all, that she had so hastily acquired. Meanwhile her health in all probability has suffered from the strain to which her mental faculties have been subjected, and from the excitement consequent upon the spirit of keen competition. Her purpose having been fulfilled,—her school prizes, and the applause of her friends, having been duly earned,—she will probably lay aside her studies,

and devote herself to novel reading, or other exciting amusements. In saying this, I have described a very common case, and one that has frequently come under my own observation. Doubtless there may be many exceptions. There are girls to whom knowledge, for its own sake, is positive enjoyment, and to whom study is no hard task, to be laid aside with school lessons. To all such, the present system of an enlarged intellectual culture is a real blessing. To go back to the old routine system of a certain number of prescribed lessons, to be carefully learned by rote, would scarcely be advisable in any case. That system, indeed, had its advantages. To the thoughtful and original mind it gave opportunity for quiet study and reflection; while to the more trifling and common-place characters, which form the majority in our own as well as in the other sex, it afforded time and scope for attention to matters more exclusively practical and domestic. But the progress of the age, and the more general diffusion of knowledge among all ranks of society, certainly require that more enlarged and varied mental training, which the *intellectual system of education* (as it is called) is designed to supply; and parents who are desirous that their daughters should fully appreciate and profit by it, must set themselves to the task of supplying, in the domestic circle, what they perceive to be wanting in the more general and public instructions which they are receiving. A resident governess may indeed supply such deficiencies, if she is herself well educated, and is conscientious in the discharge of her duties. Home education may perhaps be more satisfactorily carried on by such an assistant than by the parents themselves. But the majority of parents in the middle ranks of life cannot afford to provide for their daughters the double advantage of good public teaching and a well qualified governess.

On parents themselves, therefore, and especially on mothers, devolves the duty of personally superintending or assisting in the education of their daughters. It is their part to see that the seeds sown in their young minds, by their teachers at school, have taken root. They must be sedulously watered and protected from noxious weeds, that in due time they may bring forth fruit. And, in order to effect this, it is the duty of parents to begin by reviewing their own education. If it has been defective or partial, or if they have neglected to improve it, they must retrace their steps to the very foundation, until they have made themselves familiar with the rudimentary instruction which their children are receiving at school. Nothing is too elementary for a mother to learn. On the other hand, if she find that she does not need this kind of elementary training for herself, she must go on continually building upon the good foundation that has been laid in her own mind. She must read and study, with a determination to keep her mind on a level with the advancing literature and scientific discoveries of the day. She must, from time to time, revive her recollections of the history of the past, and, above all things, she must cultivate in herself the habit of imparting, in an intelligent, and, if possible, in an attractive manner, to her children, those mental treasures which she has stored up in her own mind. For this purpose, the mother must endeavour, so far as it is in her power, to provide herself and her children with a supply of good books. She ought to possess at hand, and ready for daily use, such books of references as may assist them in preparing their school lessons, and enable herself to co-operate with them.

If she has access to any public or private library, there will be a risk that her children may choose books of mere amusement for their private reading; and if she permit their unrestrained choice in the matter, their taste will very soon be vitiated, and it will be difficult, and, in ordinary cases, impossible, for them to relish more substantial reading. A mother must therefore deny to herself a kind of literary relaxation, which, though harmless in her own case, might be injurious to them. If children have a natural taste for reading, they will readily read such books as seem interesting to those around them. They will learn to occupy their minds with such subjects as are discussed in their presence; and, after a few years, when a taste for substantial

mental food has been acquired, they may, without danger, be permitted to read in moderation some of the best fictitious literature of the day. If, on the other hand, children have no desire to read anything, it is better to allow them to acquire information from daily observation, than to bribe them to become readers, by presenting to their notice the coloured picture-life of fictitious story. To many intelligent children, the mere act of reading is difficult and irksome; yet such children have quick eyes to see and ears to hear. These, in early years, serve the purpose of books to them, and when the desire for reading is awakened, their minds, being well prepared and stored from sources chosen by themselves, will be qualified to appreciate the information to be derived from books. A mother whose own mind is well cultivated, and who seeks for herself and her children the society of intelligent friends, possesses great facilities for imparting information and a cultivated taste even to such young persons as will not read and inquire for themselves. All children are naturally curious; knowledge of some kind they are daily accumulating; and if she checks in them the habit which curiosity forms in the uncultured mind, of busying itself about the petty concerns of others, their desire *generally to know*, and to increase in knowledge, is sure to flow into a more healthy channel. Without direct teaching she may, in this way, have daily and hourly opportunities of awakening their interest, and calling forth their sympathies, on those subjects which engage her own attention; and, by reading to them, from time to time, such passages from the books she is studying, as may amuse or interest their young minds, she will gradually induce them to pursue the subject for themselves in a form more level to their understanding. She will talk to them familiarly on the subjects introduced into their daily lessons; she will seek illustrations of them in the events continually passing around them, and in circumstances which, without her aid, would, by themselves, be unobserved and unimproved. Facts and characters in the history of the past, she will compare with facts and characters in the history of the present; and will thus lead their minds on to what may be anticipated in the future.

The geography of foreign countries and climates will be compared with that of their own country; and she will endeavour, as far as she possibly can, to make them familiar with the geographical peculiarities of their native land. She will make them observe what changes have been wrought on the earth, on the tastes, habits, and opinions of men by the influence of climate, by the migrations of various races, by the progress of civilisation, and by other external circumstances; but, above all, she will make them observe how, under all external diversities, Christianity has ever wrought as a mighty lever, always tending towards one and the same blessed result - the humanising and elevating of the human race in every age of the world, and in every country. By using such means as these, a judicious mother will see that the instruction communicated to her children at school is not received into a barren soil, but into good ground, prepared by her own hands, so that every seed of real knowledge that is imparted to them is likely to take root and bear fruit in after life.

In all that I have yet said, I have been speaking merely of such intellectual training as girls, in common with boys, receive at school up to a certain point of progress. But there is an education peculiarly adapted to their own sex which, in these times of rapid intellectual development, is often seriously neglected. By the education of a woman's intellect, she is indeed better fitted to be the companion of man: but man needs *help from her ministrations* as well as companionship. Women ought to learn, as special branches of education, the practice of those ministering arts which shall enable them to render comfortable, to enliven, and to adorn, the homes of their fathers, their brothers, or their husbands. In every rank of life, a practical acquaintance with domestic management, in all its minutest details, is of the utmost importance to the right government of a household; for even if a woman, by affluent circumstances, or by her

exalted rank in society, be raised above the necessity of ministering, with her own hands, to the daily wants of the family of which she is the head or a member, she can only be thoroughly qualified to direct those who act under her by experimental knowledge of the duties belonging to each department of her domestic economy. She must not only know that this or that piece of household work is at fault, that there is something wanting here or there in her domestic arrangements,—but she must know *how* the work may be better done, and in what manner the defect she has discovered may be remedied. Girls need to be taught these things in the home of their parents, in order to be qualified for the possession of homes of their own. So long as a girl is at school or engaged in school-room exercises at home, according to the present system of education, her time is generally so fully occupied with her books, her music, her pencil, and other accomplishments, that everything else is liable to be overlooked or thrust into a corner. It ought not to be so. Time ought, in the first instance, to be found for the essentials of her life as a *woman*; and, out of the savings of that time, she may spare enough to bestow on mere accomplishments, according to the measure in which they may be useful in her station of life, or adapted to her special capacity. It is not possible, even if it were desirable, that every lady should be an accomplished linguist or musician, or that she should sketch or paint scientifically, although these accomplishments are valuable, where they can be followed out; but it is absolutely necessary that a lady should learn to use her needle skilfully and neatly, that, if not obliged to labour much in this way herself, she may be able to plan and direct for the wants of her family. Moreover, there are many occasions in which even a lady of high rank or affluent means may not be called upon to study or play on an instrument, or draw with her pencil, but in which she may find a piece of needlework a great help to herself, and which, if neatly executed, may render her more companionable, and even more ornamental in her sphere of life than the exercise of accomplishments or intellectual gifts. Further, that a lady may be qualified to direct her servants in the arrangement of her household, it is necessary that she should acquaint herself with those general rules relating to health which, in connection with larger communities, are termed “sanitary laws;” but which are often as glaringly disregarded in private families as in villages and cities. Servants, as a class, are habitually, and almost on principle, negligent of these rules; and unless a mistress is acquainted with them, and is determined to enforce them, her domestic management will be defective. The more experimentally she makes herself acquainted with these laws, the more will she be respected by her servants, and the more willingly will they obey her, for they will see that her commands, though at times irksome to themselves, are not given in an arbitrary spirit, but that she acts reasonably and kindly. In the management of a young family, this kind of practical knowledge is all-important. More than one-half of the human race die in early infancy, and as this is quite contrary to the rule among the lower animals, in man it evidently arises from the neglect of those laws the observance of which is necessary for the preservation of life and health. Instinct teaches the lower animals their necessary duties towards their offspring; but men and women have been left to learn by the use of reason, and by patient experience, what things ought to be done and avoided for the preservation of their children’s lives, and their continuance in good health; and when a young woman becomes a mother, with no more knowledge of the treatment which an infant requires than if it were a doll, we cannot be surprised that, in fifty cases out of the hundred, she makes grievous mistakes, and is left to bewail their bitter consequences in the early death or sickness of her little ones. Again, when sickness for the first time enters her family, the untaught, inexperienced mother is at fault if she has not learned in her father’s house the art of nursing the sick, and of imparting to the sufferers those little comforts and alleviations which a woman’s hand alone can efficiently administer. If it has been thought

necessary in our days to have associations for the purpose of teaching hired nurses to minister to the sick, it must be greatly more essential to teach that practical science in all its details to our daughters at home, who are, under God’s providence, the divinely-appointed sick-nurses for the world at large. In this science love is the best teacher, and love being already present in the heart of every child in a well regulated family, she will enter upon her apprenticeship as a sick nurse with an advantage which can rarely be expected in one who learns to work for hire. She has besides the docility and readiness of youth superadded to the gift of natural affection.

I have given but a rough sketch of the sort of domestic training which daughters ought to receive from their mothers—and I have said nothing as yet about their *physical* education, which ought never to be neglected. The health of girls as well as boys is too often sacrificed to the demands made upon them by preparation for their school duties, and especially by the amount of time which is devoted to the acquisition of music. Much of this time is, to a great degree, wasted; because, if a girl has a natural taste for music, she will apply to its exercises with alacrity, and will make sufficient progress to satisfy all the requirements of domestic life, without devoting to her instruments hours of irksome daily practice; whereas, if she has no natural taste in that direction, or if the acquisition is repugnant or difficult to her, as is the case with many school girls, the attention she is obliged to bestow upon it is a mere useless expenditure of time and money. Girls, who in their school days are thus urged to the acquisition of an accomplishment which they cannot appreciate, and in which they can never excel, invariably lay it aside as soon as they become mistresses of their own time. The hours thus wasted might have been far more profitably employed in strengthening their bodies by free exercise in the open air, while their education might have been carried on by the same means in a way most salutary and agreeable to themselves. While exercising their limbs in the open fields, the mental as well as bodily faculties of children are at once expanded and strengthened. Their senses being kept awake in examining the works of nature above, around, and beneath them, improve by daily practice. Walking, riding, and travelling may be made to them, not the mere progress of a living locomotive engine, as is too often the case, but the progressive advancement of an intelligent human being. Having their eyes and ears open to receive impressions from the works of nature, children, even at a very early age, may be induced to take a practical interest in such sciences as botany, zoology, mineralogy, and astronomy. Every item of information which, in their daily rambles, they may collect on these subjects may be treasured up in their retentive memories, and be kept there as pegs whereon to hang all the knowledge which they may hereafter accumulate, in their school studies, or from home reading, while all the while they have been gathering up a store of health and mental elasticity which will greatly assist them in their daily task, and strengthen their constitutions for the more arduous sedentary occupations of their future lives. Whatever mental acquirements or elegant accomplishments parents may feel compelled to forego in the education of their daughters, let them never sacrifice the health of the young creatures. Let them have leisure every day for two or three hours’ relaxation, and in the open air, if possible; and, if they be dwellers in cities, let them embrace every opportunity for giving them a day or a week’s excursion into the country. Parents may rest assured that a body relaxed by the confined air of cities, of over heated private houses, and over-crowded schoolrooms, and a mind wearied by the sedentary pursuits so irksome to youth at all times, will be ill prepared for the further pursuit of knowledge; while a mind kept awake and susceptible to right impressions from outward objects, in a well braced, energetic frame, will do more work in one hour than could be accomplished from many hours devoted to the perusal of books. Books themselves can be very imper-

fectly understood or appreciated by those who have not learned to study the great and glorious book of nature.

"There is a book, who runs may read,
Which heavenly truth imparts,
And all the lore its scholars need—
Pure eyes and Christian hearts.

"The works of God above, below,
Within us, and around,
Are pages in that book to shew
How God himself is found."

I am aware that to all the foregoing hints on maternal duties many mothers may reply, "But we have no time to bestow personally on the education of our daughters. We have sent them to school for this very reason, and our numerous domestic avocations leave us little leisure to advance either our own intellectual culture or theirs." But I do not at present address myself to those mothers who have absolutely no time to spare. I am writing rather to those whose pecuniary resources enable them to have servants at their command, and who are therefore exempted from the toilsome duties devolving upon those who must serve themselves. It is a trite remark, that the mothers of great men have largely influenced the characters of their sons. Whether this influence has arisen from a natural similarity in the characters of mother and son, or from the more direct influence which the parent has exerted over her child, may be a question; but undoubtedly, on either supposition, the remark is as applicable to the mothers of great and useful women; and, although all mothers do not expect their daughters to become great, all expect, or at least wish, them to become good and useful members of society. We find mothers, in every rank of life, who have been efficiently instrumental in the education and training of their children, and who, in the midst of multifarious public and private duties, have found time to superintend it personally. The mother of John Wesley may be mentioned as one out of many instances of this efficient personal influence. She had nineteen children, most of whom lived to be educated, and ten of whom attained to man or woman's estate. All these were educated by herself. Her son John mentions the calm serenity with which his mother transacted business, wrote letters, and conversed, surrounded by her thirteen children. All her occupations, as a mother, a wife, and the head of a family, were so methodically arranged, that she found time for everything; and she had, besides, no small share in managing the secular concerns of the rectory of which her husband was the head. As the pivot round which all her other duties turned, she made time, in the first instance, for the primary duties which she owed to her God, retiring for private devotion three times every day, and so arranging the affairs of her household that her children, even from their early years, were habituated to the same exercise. She was a woman of a highly cultivated mind, for she had read much and thought much. Greek, Latin, logic, and metaphysics, had formed part of her studies, and by these means she was enabled, not only to educate her children in their early years, but to follow them through life with her sympathies, her prayers, and her counsels; and to maintain, till her latest hour, her place in their affections, their esteem, and their reverence. We have more recently had another instance of the same presiding care in the education of a family in the home of the late Isaac Taylor, who was mainly instructed under the roof of his parents, and who, from an experimental appreciation of the system, brought up his own large family on the same principle, and has left to other parents a guide to the same course, in his excellent book on home education. These were the households of mothers who were by no means affluent, and who were not raised above the necessity of attending personally to the comforts of their families; yet they found time for mental culture, personal as well as relative.

But instances are not wanting in the higher ranks of life, in illustration of this subject. The celebrated Jeanne D'Albert (the mother of Henry IV.) was educated under the strict personal

superintendence of her mother, Marguerite of Navarre, and she in her turn held the helm in the education of her children. Our own king Henry VII, owed much of his wisdom, prudence, and success in life to the careful watchfulness of his mother, the Duchess of Richmond; and, to look nearer home, those who are nearly concerned in the education of the present royal family, bear testimony to the unwearied care and daily solicitude with which our own Sovereign, as well as her late gifted Consort, have presided over the education of the royal children. Our Queen is always on the alert, and, amid her numerous public and private avocations, is pre-eminently *The Mother*. Instances might be multiplied to no end in illustration of the subject, but enough has been said to recommend it to the attention of every anxious mother, and to such mothers as may read these remarks, I bid adieu with this parting advice, "Set your hearts earnestly and steadily to this work, and in due time you shall reap, if ye faint not, and your children will rise up and call you blessed."—*English Journal of Education*.

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JOURNAL OF EDUCATION.

QUEBEC, PROVINCE OF QUEBEC, DECEMBER, 1867.

To our Patrons and Readers.

Before this number of the Journal which closes the eleventh volume, reaches our readers, another year shall have formed a portion of eternity.

Whether it has answered the end, proposed by its founder remains, for its leaders to say.

One thing may be said in advance the intentions were good. The price of the Journal is only fifty cents a year, or about four and a quarter cents per number, which certainly puts it

within range of any Teacher's means; and the Teacher who cannot find value in each number for four cents and a quarter, we think, without being egotistical, must be very far above or below his or her calling.

Every other profession has its organ, and why not Teachers have theirs. Is it because their calling is less important? we think not.

Can anything be of more vital importance than the charge confided to the Teacher.

The nearest the dearest, all that parents hold dear in this world handed over, blind-fold, fettered, feeble and unformed in mind, to the tender mercies of the Teacher.

Will any Teacher say he does not require great preparation for such a task? The lawyer prepares himself, so does the Physician, so does any man in any department of life, where he intends to succeed even moderately.

We speak strongly on this point because we are convinced of its truth.

The aim of the Journal for the future, as in the past will be, amongst other things, to advocate the just claims of the Teacher to a higher remuneration for his labour, as well as a recognition of his right to the social status, to which his qualifications and importance to society entitle him.

We earnestly request the cooperation of the Educators of the Province, particularly Heads of institutions of Learning, Professors, Teachers, and all interested in Education, and who is not, to aid us in making the Journal bear out its name *Journal of Education*? We would be glad to receive original articles on Education, reserving to ourselves, of course, the right to reject anything objectionable in form or matter.

Let the Teachers then make this, the only Teacher's Journal in the Province, their own, let them have that *esprit de corps* for their profession, found in other bodies, and they may rest assured we shall not be found wanting as an able seconder of their just and proper movements. Trusting our appeal will be responded to in the proper spirit, in the spirit which prompts it we conclude wishing our Patrons and Readers a Happy New-Year.

Cameo of the Emperor Augustus in the Blacas Collection.

BY THOMAS WRIGHT, M.A., F.S.A.

Perhaps the most important of the additions made to the antiquarian department of the British Museum of late years was by the purchase entire, for the sum of sixty thousand pounds, of one of the best known collections in France, the antiquities of the Duc de Blacas. The French antiquaries, who regret greatly that they let this interesting collection slip out of their hands, praise our own negotiators for the skill and energy they displayed throughout the whole affair. The duc, who, since the overthrow of the elder branch of the Bourbons in France, had withdrawn from anything like political activity, devoted his time and wealth to his museum, to which most of the collections sold during his time contributed more or less largely. He purchased the whole Strozzi collection, from Rome, with the exception of one beautiful gem, representing the young Hercules (*Hercules juvenis*), engraved on a sapphire, and bearing the name of the engraver in Greek letters, ΓΝΑΙΟΥ (*Cneius*). While the collection was still in the possession of Strozzi, this fine work of art was stolen, and a copy in glass left in its place. Years after, when the collection had passed to the Duc de Blacas, who imagined that he possessed the original gem, he was surprised

at seeing it brought to him, and, discovering the fraud, he succeeded in obtaining possession of it by purchase. This original is now with the rest of the collection in the British Museum. His taste as a collector appears to have run chiefly upon three classes of objects, Greek and Etruscan vases, engraved and sculptured gems, and early personal ornaments of gold. The first of these three classes, that of the vases, has been made better known to the public than the others through the works of Panofka, De Witte, and others; and some of the finest of the gems in the Blacas collection having been derived from the older and better known Strozzi collection, have been spoken of in different works on this branch of ancient art, but otherwise the contents of the museum of which we are speaking are not very generally known. It was from the Strozzi collection that the Duc obtained the noble cameo of Augustus, represented in our accompanying plate.

So much has been written on the history of precious stones and of the lapidary's art, that it is now hardly required, in treating of a subject like this, to go at any length over ground which has been so well trodden before. The ancients themselves had abundance of wonderful stories of the immense values set upon particular precious stones, and of the singular parts they had sometimes played in history. Pliny the Elder, in his chapters on this subject (*Hist. Nat.*, lib. xxxvii.), tells us that it was the common belief that the first individual who wore a ring with a stone in it was Prometheus, who had been condemned by Jupiter to carry on his finger, as a memorial of his offences, a bit of the rock of Caucasus set in a ring of iron; and this, he tells us, was, according to the tradition, "the first ring and the first jewel known." But Pliny adds that, in this case, he disbelieved the tradition, and that his opinion was that this ring of Prometheus was only that of the chain by which he was bound to the rock. The same writer tells us next of the celebrated jewel of Polycrates, the tyrant of Samos, upon which so much value was set that he imagined that the voluntary loss of it would be a sufficient expiation to the inconstancy of Fortune to avert her wrath, and he went out to sea, and threw the ring containing the jewel into the waves. But the fickle goddess refused to accept it; a large sea-fish, served at the king's table, was found, when carved, to contain in its belly the fatal jewel, which was restored to the king; and the latter, in the sequel, ended his life miserably. Pliny tells us that this precious stone was a sardonyx, which was still in his time preserved at Rome, where it had been given as part of the ornamentation of a horn to the Temple of Concord by the Emperor Augustus, and he says that it was there considered as much inferior to many other jewels then collected in the Roman capital. It was reported, a few years ago, that the ring of Polycrates had been found in a vineyard near Rome, by a vine-dresser of Albano; but as it was described as a very fine intaglio, with the name of the artist, it is probable that the whole story was a fiction, or the ring a forgery.

The object of the first people who made use of precious stones, was of course to display the stones themselves, on account of their beauty and the great value set upon them. Pliny, launching out into admiration on this subject, says that a precious stone is an object "in which the majestic might of nature presents itself to us, contracted within a very limited space, though, in the opinion of many, nowhere displayed in a more admirable form." Many people, he says, looked upon it as no less than sacrilege to engrave them, even for signets, although he considers that the especial purpose for which they were created. In another part of his great work (*Hist. Nat.*, lib. xxxiii. c. 4), Pliny recurs to the ring of Prometheus, mentioned above, and to rings of iron and of gold. As might be expected, some of these primeval rings became celebrated for qualities which were more than natural. Midas, according to our writer—others say Gyges—had a ring which, upon the collet being turned inwards, caused the wearer to become invisible. The only rings known among the early Romans,

were of iron, and even they only came into use at rather a late period. At the very close of the republic, a gold ring was only made use of on public and ceremonious occasions of great importance. The *annulus pronubus*, which was sent as a present to a betrothed woman, as a sign of her engagement, was only of iron. Pliny believed that the use of rings had not existed even in Greece at the time of the Trojan war, and he tells us that the first date in Roman history at which he could trace any general use of them was in A.U.C. 449, in the time of Cincius Flavius, the son of Annius. Yet, as he adds, after this date they must have come into use very rapidly, for, in the Punic war, they were so abundant that Hannibal was able to send from Italy to Carthage three modii of them. The next advance in luxury was the practice of inserting or setting a precious stone in the gold of the ring, and it was not till a still later period that the use of signet rings was adopted, which implied the engraving of a device, of some kind or other, on the stone of the ring. Pliny tells us distinctly that the stone of the ring of Polycrates, or at least the one shown for it at Rome in his time, presented no traces of engraving.

The first engraved gem he mentions belonged to Pyrrhus, king of Epirus, the great enemy of the Romans. This was in the first half of the third century before Christ, and the history of precious stones was still involved in so much mystery, that King Pyrrhus was believed to have in his possession an agate (*achates*) on which were figured the nine muses, with Apollo holding a lyre, the work not of the engraver, but of nature herself, the veins of the stone being so arranged naturally, that each of the muses had her own peculiar attribute. At a later period, notions like this prevailed extensively, and in the more ignorant periods of the middle ages, people believed that the ancient intaglios and cameos, which were often found in digging the ground on ancient sites, were natural objects, and that engraving on them was a mere natural indication of the special power or quality each possessed. Some of the mediæval writers believed that the *fidus Achates* of Roman fable was nothing but a precious agate, on which depended the fortunes of Æneas.

We know nothing of the first beginnings of the art of engraving upon precious stones, but it appears to have come from the East.

Pliny, who is our chief authority on these matters, mentions an edict of Alexander the Great, forbidding the engraving of his portrait on a smaragdus (supposed to be the emerald) by any other professor of the art but Pyrgoteles. We seem from this justified in supposing that, in the age of Alexander, the art of engraving on gems was extensively practised in Greece. Less than a century before Christ, Mithridates, the celebrated king of Pontus, possessed a dactylitheca, or museum of signet rings. With Augustus and the earlier Roman emperors, the possession of these dactylithecæ became a great subject of pride, and the Romans displayed a sort of wild extravagance in their taste for possessing cameos and intaglios, and in the immense sums they gave for them. The first who formed a dactylitheca at Rome was Scæurus, the stepson of the dictator Sylla, but all we know of it is the statement of Pliny, that it was much inferior to that of Mithridates, which latter was transferred to Rome by Pompey the Great, the conqueror of Mithridates, and presented by him to the capitol.

The contents of the dactylithecæ appears to have been little appreciated by the Barbarians, and, after the fall of the empire of the West, the taste for this branch of art was carried to Byzantium, whence it returned to Western Europe in the fifteenth century. Yet the people of the middle ages, with that mysteriously superstitious regard for them already noticed, sought eagerly to be possessed of them. It is very common to find a great baron or knight, or an ecclesiastic, sealing his charter or other document with a seal in which an ancient intaglio is set instead of an ordinary mediæval seal. Perhaps he thought that, being an object of comparative rarity, the possession of it was something to be proud of; but it is probable also, that he looked upon it as possessing some superior power which gave

him protection or security. In this belief, catalogues of intaglios and cameos, with lists of their several qualities, or virtues, were published, and are sometimes found in mediæval manuscripts.

A very handsome cameo, described by one of the modern writers on this subject, was looked upon with regard as a preservative against rats! Among a great number of such objects formerly preserved in the treasury of the Cathedral of St. Paul's in London, one, which bore a figure of Andromeda, had the power of raising love between man and woman; one with the figure of a hare was a protective against the devil; a dog and a lion on the same stone preserved against dropsy; the figure of Orion gave to one of these stones the quality of securing victory in war; in another the figure of a syren, sculptured in a jacinth, rendered the bearer invisible.

It was in a great measure out of these mediæval collections of gems, ecclesiastical or lay, the result of mere accidental finds, that our modern collections have been formed, with the addition of others found in antiquarian excavations of a later date, and they are thus, more or less, of a very miscellaneous character. The dactyliothecca of the Roman age, if collected by a man of taste, would contain nothing but stones of the highest degree of art, and even if he erred in judgment himself, he could find an adviser who would assist him; he did not collect his specimens by chance, glad to get all that came to hand, but sought them from the best sources, so that he had probably nothing but what was good. It is different with the modern collector. The cameos and intaglios which are brought to light by ordinary antiquarian excavations are, for the most part, of a very low degree of merit, such as no doubt were possessed by people of the commoner classes. The modern collector has little but these to collect from, and not in such abundance but that he is glad to get all he can, or at best to pick out here and there any one which seems better than the others, and wait for a rare chance of obtaining something of a very superior character. Such is the general character of the contents of most modern cabinets, and especially of such as have been made by private collectors; and such, no doubt, is the cabinet of intaglios and cameos of the Duc de Blacas. It contains a certain number of very fine works of art, among a large quantity of specimens of very ordinary merit. This is especially the case among the intaglios, which may perhaps be said to be the case generally. The stones necessary for the cameos were rarer than the others, and were probably seldom given to the artists of inferior merit who employed themselves on intaglios, and the two processes differed considerably in the manner of carrying them into execution. In modern excavations on ancient sites, an intaglio is often found, but a cameo very rarely. Even now we do not know where the Romans obtained the large sardonyses on which they engraved the fine cameos which are preserved.

The sardonys on which the fine head of Augustus in the Blacas collection is engraved forms an oval, five inches and a quarter in length, by three inches and three quarters in breadth, and is of very good quality. The ground, or layer, of the stone out of which the head rises is of a fine russet colour, which throws the engraving into very delicate, though rather low relief. A head of Medusa appears to form the centre of the shield which covers the breast. Augustus has a band, or fillet, round his head, the sign of his imperial dignity, on which are set four precious stones, an emerald on the left, and, following it in their order towards the right, a sapphire, a topaz, and a ruby, and round the figure in the middle are arranged four very small diamonds. In the collection of the Imperial Library at Paris, there are several cameos as large, and perhaps a little larger, than the Augustus of the Blacas collection, but there is hardly one of them that equals it, and certainly not one that excels it as a work of art. The expression of the countenance is brought out with great delicacy and refinement, and the artist has displayed the greatest skill in taking advantage of the colours and shades offered him by the stone. Little appears to be

known of the history of this remarkable work of art, except that it was formerly in the Strozzi collection.

The age of Augustus is said to have been that at which the art of engraving precious stones was carried to the highest degree of excellence among the Romans, and we need not therefore be surprised if we find so many of them representing the features of that emperor. Pliny (xxxvii. 4) celebrates the merits of a portrait of Augustus by an engraver named Dioscorides, which was used as the signet of the emperors who succeeded him. One of the finest cameos known is a tricoloured sardonys, about a foot high, representing, in twenty-two figures, the apotheosis of the Emperor Augustus, and which was therefore probably engraved soon after his death. It was brought from Constantinople in the reign of St. Louis, and being, in the ignorance of that time, supposed to represent the triumph of Joseph over Pharaoh, it was considered to regard the church more than the laity, and was placed by that monarch among the treasures of the Sainte Chapelle in Paris. It is now preserved in the Bibliothèque Impériale. In the same case with the large cameo of Augustus in the Blacas collection there is a small one, of the same emperor, also on sardonys, which came likewise from the Strozzi cabinet.

The choicest examples of the Blacas collection are arranged in two cases, at the two ends of a box or frame, one with the large cameo of Augustus in the centre, looking towards the entrance-door, the other in the opposite direction. The first contains forty intaglios and cameos, and among the latter, besides the two already described, a cameo on sardonys, representing a portrait of Tiberius, also from the Strozzi collection, which strikes us by its wonderful relief, but it has suffered much from rubbing. Among the intaglios in this case are a portrait of Julius Cæsar engraved in jacinth, the features of which are wonderfully sharp and delicate; a Silenus, on cornelian, with full face, remarkably fine; another Silenus, side face, on amethyst, which is also finely executed, and has the name of the engraver inscribed in Greek letters, Hyllus; and a Mænad, whose wild and drunken fury, and the voluptuous fleshiness of her bosom, are represented with extraordinary effect. The other select case contains forty-two examples. It also has its large cameo, well executed, on a sardonys about five inches high, representing the Empress Messalina. The portrait of Juba II. is represented in a delicate little cameo on sardonys. A head of Livia, on cornelian, is also worthy of our notice, because the head is in intaglio, surrounded by a border in cameo. This also came from the Strozzi collection. Among the intaglios in this case, we may call attention to a female head in cornelian, with a sweet little face; a very characteristic portrait of Vespasian, in cornelian; and a small head of Horace, in topaz, of considerable merit. There is also in this case what is called an amulet, in cornelian, formed in the shape of the petal of a flower (perhaps intended for a rose), with two small Cupids, very prettily executed in intaglio.

The rest of the intaglios of the Blacas collection, with two or three cameos, are placed in three large cases, upon tables, on the other side of the room, and are mostly of inferior work. Many of them have suffered from rubbing and ill-usage. They amount in all to 384. We may, in passing over them, point out to notice No. 20, a neat little cameo of a horse, of tolerably good work, and No. 245, a sardonys remarkable for its neat border of astragals.

In the course of collecting, the Duc de Blacas embraced a taste for acquiring a class of monuments which were then comparatively little thought of, those of the earlier ages of Mahometanism, which are intimately connected with the present article by the circumstance that among them the intaglios, or engraved stones, hold a very prominent place. The duc was one of the earlier friends of the late accomplished and lamented professor of Arabic in Paris, M. Reimaud, who, at one time, might almost be looked on as the keeper of his Mussulman antiquities, and who, in 1828, published, in two octavo volumes,

a very learned description of them, under the title of *Monumens Arabes, Persans et Turcs, du Cabinet du Duc de Blacas et d'autres Cabinets*. The choice Mahometan intaglios of the Blacas collection are engraved and described in this work. We know that, at an early period, the intaglios had been imitated by many of the eastern religious sects in the form of cabalistic seals, some of which are found in the Blacas collection, which are known by the name of Abraxas. The Mahometans also, no doubt, borrowed the practice of engraving on precious stones from the Romans and Greeks, and they used them for the same purposes, as signets and seals, but they presented one special point of difference with both the seals of the Greeks and Romans, and with the Abraxas, a difference which of course belonged to their religious ideas. They are distinguished by the total absence of all figures, only letters being engraved upon them. These inscriptions are generally of a more or less religious character, consisting usually of short invocations or reflections, pious, moral, or superstitious. A few of the older ones are of a talismanic, astrologic, or cabalistic character.—*Intellectual Observer*.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

Quebec High School.—The examination of this school commenced on Monday last. During the past year the classes have been conducted by our well-known, experienced and deserving teacher, Mr Wilkie, and his able assistants, Messrs. Miller and Tanner. There were more than the usual number of ladies and gentlemen present; among whom we noticed Dr. Miles, Secretary of Education; Dr. Cook, Mr. Weir, Dr. Rowand, and Dr. Anderson; Messrs. Fletcher, W. Walker, Dinning, Webster, Andrew Thompson, Whitehead, and the Rev. Mr. Clark, also Messrs. John Thompson Senior, Bowles, Sewell, Craig, &c. The examination commenced a little after ten, when the first or junior class, consisting of seventeen boys, went through their exercises. They were first examined by Mr. Wilkie in English reading and spelling, grammar, arithmetic and geography; Mr. Tanner then conducted the examination in French, and Mr. Miller subsequently in Latin. The examination was thorough, and the proficiency of this class was further elicited by questions put by Dr. Cook. The second class, consisting of twenty-seven boys, then came forward, and were examined by the same master in the same order as the first, and in this examination, the Revs. Dr. Cook and Mr. Clark both took a prominent part, especially in geography and Latin. The proceedings of the day, which were pronounced very satisfactory, terminated by the examination of the copy books, and the written exercises of the boys in accounts and book-keeping. It must have been gratifying to the masters to see so much interest displayed by the parents and friends of the pupils, a number of whom remained till the close at three p. m., and for a considerable time during the day no less than fifty visitors were present. The only drawbacks arose from the difficulty of hearing the boys distinctly, owing to the construction of the hall, which, though in many respects a very fine room, has been made in utter defiance, of the principles of acoustics.

On Tuesday, at 10½ a. m., the examination of the third class, consisting of thirteen boys, commenced. They were first put through their exercises in vulgar fractions with which they shewed the most perfect familiarity. Then followed the examination in English reading, &c. Mr. Tanner then exercised them in French, and Mr. Miller in Latin, from Cornelius Nepos. They were afterwards joined by the fourth, or senior class, of eight boys, when Mr. Wilkie examined them very thoroughly on the geography of British North America: but partially of the new Dominion, and at the request of Mr. Wilkie, Dr. Anderson continued this examination, by which it was fully shewn that the boys were perfectly at home in the geography of their own country. English history was then taken up by Dr. Cooke, and a half an hour was well spent in this way. The fourth class was then examined in vulgar and decimal fractions by Dr. Miles, and subsequently in geometry and Algebra. This examination lasted for about an hour, and was very interesting. It being now three o'clock, Dr. Cook announced that the examination of the fourth class in French and Greek would be deferred till Thursday, the 11th of January, when, the Committee would be prepared to state their opinion of the standing of the various classes.

We will now give our impression of what fell under our notice during these two days. There were present in all sixty-five boys, presenting fully the average appearance of boys of their age. The examination had not proceeded far before it became evident that they were not then placed in the class according to individual merit. The inequality in talent which

was to have been expected was present, and though we do not recollect any boy who did not answer fairly, we could have no difficulty in finding out a good many who were pre-eminent. The system of instruction in all the departments we pronounce well calculated to accomplish the object in view. The masters have aimed at a thorough grounding in first principles; this, we think, has been successfully accomplished, and we are satisfied that the good seed having been sown, the future progress, *celeris paribus*, must be easy. We make no distinction between any of the departments or classes; they have all been equally well taught. Mr. Wilkie has been long in Quebec as a most patient, gentle and successful teacher, and his great modesty and abnegation of self, have alone prevented him from taking a much more prominent position than he has hitherto done, but which all who know him must admit he is fully entitled to, Messrs. Miller and Tanner are young men of excellent character, good abilities, and efficient teachers, and must eventually attain a very high standing in their profession. We were desirous of ascertaining the proportion of the occupied in the different departments, and we think it is very fairly divided. All the branches of a thorough English education are fully attended to; French is well taught, while Latin, though very far from being overlooked, occupies such a position, as we think Mr. Lowe himself would not object to, in any system of education qualified to enable any one to enter upon what is literally and truly the *battle of life*.

In conclusion, we must remark, that as our attention was specially directed to the question as to how the classic and commercial branches were taught in the High School, we made it a special object of observation, and we can in all sincerity express, not mere satisfaction, but positive delight with what we witnessed. We know that other schools have acquired a high reputation as commercial schools *par excellence*, but we have no hesitation in stating our deliberate conviction that if any person will take the trouble to examine the written exercises that have been lying on the table of the High School during the days of examination, and further, if he will examine the boys who produced them, he must be convinced as we have been, that the High School is *second to none* in imparting the branches of a commercial education, while it stands unsurpassed in its teaching the French Latin and Greek languages.—*Quebec Chronicle*, Dec. 27.

National School Entertainment.—The second Literary and Musical Soiree, at the National School, last evening, was attended by one of the most respectable and intelligent audiences that could be collected together in this city. Every available space in the Hall was occupied, the object and character of the entertainment, no doubt, inducing a large number to be present. The musical trio, by Messrs. Mills, Scott and Peters, was executed with much precision, and deservedly applauded. Mr. Grant then delivered a short address explaining the objects of the performances and urging the necessity of their encouragement, as they were given in aid of schools for the education of the poor. We are pleased to hear that it is the intention to continue these re-unions about once a fortnight during the winter. There could be no better mode of spending an agreeable evening, and as the object of the entertainments is a very commendable one, we bespeak for them a generous support from the public.—*Quebec Chronicle*.

Tea Meeting.—The annual tea-meeting of the children attending the Wolfe's Cove Sunday School was held on Friday evening last, in Mr. Gilmour's school-house. The children, numbering in all 66, sat down to tea at 6 o'clock, and did ample justice to a well-prepared table—prepared under the superintendence of Mr and Mrs. Duncan. After tea the scholars were examined by Mr. Ross, their Superintendent, and by Mr. Gillespie, as to their proficiency in knowledge of the Scriptures, various portions of which were correctly repeated by several of the children. Both the teachers and pupils acknowledged with thanks their obligations to Mr. and Mrs. Gilmour for their aid and co-operation in support of the Sunday School. The meeting broke up at 10 o'clock, and all present united in expressing the pleasure and enjoyment they had at the anniversary of the Wolfe's Cove Sabbath School.—*Ibid*.

Presentation.—On Friday, the pupils of Mr. Thom, of this city, presented him with a very handsome case of silver desert fruit spoons, inlaid with gold, accompanied with a very pleasing address. This speaks volumes as to the feelings entertained by the scholars towards their teacher. It was a complete surprise to the latter, as he had no idea that anything of the kind was in contemplation. It was his intention to have kept his establishment open until Christmas eve, but the boys settled matter by their action. School was declared closed for the holidays at once.—*Ibid*.

Presentations.—It is with pleasure that we learn that the pupils at the High School presented Mr. Wilkie with a very handsome ice-pitcher. Master Webster was selected to present them:

TO D. WILKIE, ESQ.

We, the undersigned scholars of the first and second classes in the High School of Quebec, beg that you will be pleased to accept the accompanying present as a feeble expression of the gratitude we feel for your unwearied kindness and attention to us whilst pursuing our studies under you. We cannot express all we feel towards you, but we all hope by diligent atten-

tion to our tasks, and implicit obedience to your commands in future, to prove that what we now utter are not idle and empty words.

Signed by upwards of forty boys.

—The pupils of the High School also evinced their appreciation of their classical master, Mr. M. Miller, by presenting him with a very valuable and handsome chessboard and set of chessmen accompanied with a suitable address expressive of their desire that he should accept their gift in testimony of their affection and sense of his worth and exertions in their behalf.—*Ibid.*

New Year's Eve Celebration.—The scholars of the St. Columban de Sillery Protestant Dissident Schools were entertained on New Year's Eve by Mrs. Mountain and the Rev. Armine Mountain in the beautiful schoolhouse erected in the year 1864 as a memorial of the late Bishop Mountain which has for some time past been rented by the Dissident Trustees of the District for school purposes. Between forty and fifty of the scholars were present who had previously assembled in the neighbouring church of St. Michaels and after a full choral service had adjourned to the schoolhouse where a beautiful feast and a series of entertainments appropriate to the season awaited them, ample justice was done to the attractive viands wherewith the table was loaded, the children being waited on by the Reverend host and hostess and the teacher of the school, Miss Hurrock, as well as by some of the visitors consisting of ladies and gentlemen of the neighbourhood and others interested in education. Several Christmas Chorals were exceedingly well sung, but the great attraction of the evening was a splendid Christmas Tree which when lighted up and surrounded by the happy faces of the children presented a very beautiful appearance. As the different articles, consisting of books, playthings, sweetmeats, dolls, baskets and a variety of useful things were detached from the tree, the names of the intended recipients were called out, and every scholar present being included in the list, all were evidently delighted with their prizes.

The Rev. Mr. Mountain closed the proceedings with a very kind and otherwise appropriate address in course of which he stated his regret at the unavoidable absence of a gentleman who was to have added to the rational pleasures of the evening by an exhibition of views with the aid of the Magic Lantern.

It may be of interest to state that the schoolhouse is a very handsome gothic building embracing a schoolroom of about forty by twenty feet with apartments attached for the teacher. It is well finished as regards interior workmanship, and being perfectly clean lofty well lighted, and thorough ventilation provided for both in summer and winter, it is well adapted to its purpose, and is calculated to inspire by its general aspect a more decided sense of cheerfulness than is common in the case of gothic structures. On one of the walls is suspended a good picture of the late Bishop Mountain with the following inscription on a brass tablet below: "For the service of God in the instruction of children in His truth and in memory of the late George J. Mountain and Mary his wife this school house was built A. D. 1864."—*Quebec Mercury.*

Germany—The Universities.—Dollinger, the most illustrious living Roman Catholic divine in Germany, and presently *Rector magnificus* of the university of Munich, made the universities of Germany the subject of his recent inaugural address. The following is a sketch of his remarks, which were so highly appreciated by his audience, that the address has already passed through several editions:

The earliest German university was that of Prague, founded in 1348 by the Emperor Charles IV., who had himself studied at Paris, and who desired to reproduce in his own dominions the university of Paris, which was then deemed a model. Prior to that date, the Germans had been content to go abroad, to France or to Italy, for university lore; and long afterwards the fashion continued. Dollinger says that, in that age, the principal nations of Europe were believed to have quite different parts assigned to them by Providence. As empire, the holy Roman Empire, belonged to Germany; and the head quarters of the priesthood, the Holy See, to Italy, so the intellectual and learned capital of the world belonged to France.

Whereas in France a centripetal force tended to the concentration at Paris of all the higher instruction of the country, in Germany a centrifugal force produced exactly the opposite effect; so that every second-rate town, demanded, after the example of Prague, a university to itself. Several dragged on through centuries a miserable existence: how miserable, witness the universities of Erfurt and Duisbourg, which in 1805 had only 21 students each. At Erfurt, that was just half the number of the professors!

M. Dollinger ignores the Reformation fever which agitated the German universities, beginning with that of Wittenberg where Luther was professor of biblical criticism. In the 18th century, certain of them, especially Halle, Gottingen, and Konigsberg, acquired a pre-eminence of fame from the teaching of distinguished professors; and if, amid the confusions which closed the century, a number of the smaller universities disappeared, the same century saw three great and famous universities arise, viz, Berlin, Bonn, and Munich.

If Germany was behind other European countries in establishing uni-

versities, she has now the glory of being the only one whose universities are taken elsewhere as a model. Throughout Prussia and Greece, all universities are already on the German model: the Italians seem inclined to take lessons on this subject from their Prussian friends; and even in our own country, the possibility of so modifying our university arrangements as to get the benefits of the German method, has been discussed.

M. Dollinger's review of non-German universities is rather humiliating to our national pride. He objects to the French system that, instead of combining the four faculties in one institution by way of check to one-sidedness, the faculties are dispersed, and the theological faculty nowhere. In only one respect does he acknowledge the superiority of the university of France, and that is its chair of Slavonian literature. He mentions cursorily the English universities as *verlungerte gymnasten, i. e.*, prolonged classical schools; and he declares the Scotch to be in a still lower condition. Why mention those of Italy and Spain? The universities of Holland and Denmark are allowed to be of some importance; those of Sweden are quite behind, retaining still their mediæval organisation.

In the things of the spirit, M. Dollinger considers France to be Germany's handmaid. His words are: "In the language of Goethe, I should say that the eye of the German mind is, more than any other, flooded with the light of the sun. The French truly say that their country is destined to enlighten the earth after the fashion either of the sun or of the volcano. We allow the important influence exercised by France through her universally-diffused literature. Her influence on the world of letters, and even beyond, is direct and immediate, ours indirect and intermediate. By the world-wide cultivation of her language, she is present with every nation; and her business is to coin the gold which Germany digs out from the mines of science, to strike it into beautiful light pieces, and thereby put it in circulation. That is an achievement beyond us. The German language has no chance of ever becoming universal like French or English: neither have we yet attained to that clearness, elegance, and precision of expression by which the best works of our neighbours are recommended to the good taste of the entire world." In fewer words than M. Dollinger's own, Germany is the oracle of the world, and France is the interpreter.

In regard to the training of teachers, M. Dollinger prefers the free miscellaneous studies of the University, to the close drill system of Normal Schools. He says: "The scholar who distinguishes himself as an inquirer, makes in the long run the best teacher. Just as he only who can extend science is competent to preserve it, so he only can teach scientifically who, not content with collecting other men's materials, himself makes independent researches."—*English Journal of Education.*

Educational Congress.—We earnestly trust that the educational congress which is to meet at Birmingham on Wednesday, the 13th November, will be a great success. Every teacher who can possibly contrive to attend should be present. His very appearance on such an occasion is of importance, for it will tend to dispel the prevalent belief, that teachers are an apathetic and uninspired class of persons. We feel confident of this also, that, should any teacher go there simply from a feeling of the duty that lies on him to support his profession, he will be amply rewarded. For it is notorious that, when teachers once get together, and the bonds of their isolation are broken, they enjoy each other's society in no ordinary degree, and return to their work encouraged and invigorated.

The subjects of discussion are well chosen and of great interest and importance. They are:—1. How far will the proposed Scholastic Registration Act tend to raise the standard of Education throughout the country, and promote the interests and efficiency of the Scholastic Profession? 2. How far is the Science of Education capable of development in this country by the more specific training of Educators, and by such measures as the institution of a special faculty of Education in the Universities of Great Britain and Ireland? 3. What means can be adopted for training Teachers for upper and middle-class schools?

These are just the very questions which ought to be discussed at the present time, and they are questions on which practical teachers are specially qualified to pronounce opinions. And the diffusion of information on these points is calculated to be of the highest moment in advancing the cause of sound education.—*Ibid.*

—The statistical Blue-book lately published by the British Board of Trade exhibits in a tabular form the present state of primary education in Great Britain. From this table we learn that the number of schools inspected has increased from 3,825 in 1854 to 8,253 in 1866; the number of children who can be accommodated from 588,000 to 1,724,000, the average number of children in attendance from 461,000 to 1,082,000, and the number of children present under inspection from 473,000 to 1,287,000.

There are also a large number of schools throughout the kingdom which do not receive Government assistance and are not visited by the inspectors. The number of children in such schools is probably less than that in the schools of the other class.

From the same source we learn that the expenditure by the state for public education has increased from £189,000 in 1852 to £813,000 in 1861. 1863 the grants under the Revised Code commenced, and amounted to £83,000 out of a total expenditure of £721,000. In 1866 the grants under the Revised Code had advanced to £402,000, out of a total expenditure of £649,000.

Since 1852 the population of Great Britain has increased by two and a half millions. The total population is more than twenty-four and a half millions. It will be readily seen that the appliances for educating the young Britons are inadequate, that they have not increased in the ratio of the increase of population, and that Mr Fawcett and his friends are quite right in agitating for a more efficient school system

—The Right Hon. W. E. Gladstone, M P, distributed the prizes awarded to the successful competitors at the examination of the pupils connected with St. Martin's College, Castle-street, London. The college has evening classes for instruction in English, French, Latin, and Mathematics. In the course of a short address. Mr. Gladstone said: I rejoice to see the features by which this institution is characterized, and the help and countenance which are given to it by the authorities of the locality. I understand that the prizes are founded by the goodwill of certain individuals. Above all, I rejoice to think—which is the pith and substance of the whole—that there is such a willingness on the part of young men to take advantage of it. Many of the pupils contrive to find the requisite time after long hours of labour. They find "odds and ends" of time, the wise application of which, steadily continued, produces after a period, great results. That saving of odds and ends is a very humble art, but it is one which none ought to neglect. There is a very curious story told, and which I believe is true, of a Frenchman named Lafitte, who was a boy with but poor means of subsistence. He applied to a banker in Paris to take him into his service. The banker said he could not, as he had no room for him. Lafitte turned away very much down-hearted but as he was crossing the banker's floor he saw a pin on the ground. He stooped down and picked it up. The banker was so struck by this indication of care and thought that he called him back, and said that he would find him a place. He did so, and Lafitte became the founder of a bank which still exists, and which for a long time was a most famous one. It was a very slight indication, and very curious that so much should depend upon the little, wretched, miserable pin. I will not say that it is upon the pins you pick up; but this I will say, that very much depends upon the moments you pick up. There are many who think that we have nothing to do but to look to the great masses and bulk of time. If, however, you look to the moments, the hours, the days, the years will take care of themselves. It is this manful devotion of time for the purposes of study, after hard labour has been performed, and which would afford, perhaps grounds of excuse for not so applying them, that proves your earnestness, and for which you must receive benefit. The state of society in which we live is very peculiar and very anxious. We live in a state of society in which the power of the community is growing with enormous rapidity, and in which the means of enjoyment are also being multiplied very rapidly. It is a state of society in which I am thankful to say that the shares of the profits of industry which accrue to working men have been largely increased. And in the definition of working men, I at this moment wish to include those who labour with the pen or head, supposing them to be dependent upon their labour, just as much as I include the skilled mechanic or artisan. The latter have a larger augmentation of their means of living than those who pursue the labours of the desk. But although they are still in many cases insufficiently paid, they are much better paid than they were twenty or thirty years ago. This fact is owing to the unequalled prosperity of the country during the past twenty-five years. It was more needed that the number of rich men should be increased than the enjoyments of rich men should be multiplied. It was very desirable that those who had to labour so hard, who had so arduous a battle to fight, should be better rewarded. But it would be a false assumption to suppose because labour is better paid that the labouring man is richer. That does not follow. There are two kinds of wealth and two kinds of poverty. There are wealth and poverty absolute and measured by the wealth of money's worth, and poverty which are relative and not measured by the mere amount of money or money's possession, but by the relations money or money's worth brings to the views and character and habits of the possessor. In consequence of this you will often find that a man who uses small means is not unprepared to confess that he is rich; so, conversely, you will find a man, whose great means are outstripped by the greater greediness of his desires, complaining of his poverty, and that even while he is rolling in abundance. When the last happens—and I believe and trust that it does not often happen—it is one of the most lamentable cases of human debasement that can be found upon the face of the earth. What I want to point out is that, along with the increase of means, the standard of want rises. It is a critical period in the habits of individuals or society when, although the means may increase, the wants increase faster than the means—when the wants and wishes of a man increase more rapidly than the value of his labour rises. The man then is poorer. The question is not what the condition of each man shall be but that each be master of his own condition. Of those instruments by which a man may become master of his own condition, by far the most powerful is to be found in the religious motive. That I now pass by. It is not one which we have met to consider, though it will dictate that which I am going to mention—that each one in his own station should labour earnestly for the improvement of his own mind, humbly thinking that the knowledge he acquires is but as a grain of sand compared to that which he does not acquire. Pursue knowledge with confidence and perseverance,

first of all for the great value which it possesses in itself, and the great value that is not in itself but beyond itself; it acts upon the mind, strengthening it, enlarging it, enlightening it, giving it power of tissue, a subtlety and elasticity of movement, capacity for application to all the purposes of life, raising the human being, not in outer circumstances, alone—though it has a most powerful tendency to do that—but ennobling the character and the faculties with which the mind is endowed, and in consequence of which men alone, of all created beings, has the high and noble title "that he was made in the image of God." You have shown that you understand this because you practise it. I most cordially wish well to your labour. May every one of you, each in his own home, each in his own heart, each in his own private labour and occupation, each in the bosom of his family, each in the day of adversity, each in the day of prosperity, reap the fruits which diligent, honest, manful labour never will fail to produce. They may come sooner or later. In some the faculties are developed earlier than in others. With some it takes much time and labour before their fruits are seen. But depend upon it there is not a man, excepting those who have the misfortune to be born blind, or deaf, or idiotic, but speaking generally of those who are recognized as in the ordinary condition of free agents—there is not a man, whatever his difference in talent and endowment, who has not a sufficient store, if he will only use it aright, to enable him to live for the benefit of himself, for the benefit of his fellow creatures and for the honour and glory of God.—*Papers for the Schoolmaster.*

In Mr. Lowe's vehement speech on the occasion of the third reading of the Reform Bill he thus points out the bearing of that measure upon our National Education.

"I have been one who thought that our institutions in respect to the education of the people were as efficient as they could well be. I shrunk from the notion of forcing education on people. It seemed more in accordance with our institutions to allow the thing to work and freely to supplement the system. That whole question has now completely changed. All the opinions I held on that subject are scattered to the winds by this measure of the Government. It appears to me that before we had intrusted the masses—the great bulk of whom are uneducated—with the whole power of this country we should have taught them a little more, and not having done so, this rash and abrupt measure having been forced upon them the only thing we can do is as far as possible to remedy the evil by the most universal measure of education that can be devised.

"It will not be unworthy of a Conservative Government, at any rate, to do what can be done in that direction. I was opposed to centralisation I am ready to accept centralisation. I was opposed to an education rate. I am ready now to accept it. This question is no longer a religious question, it is a political one. From the moment that you entrust the masses with power their education becomes an absolute necessity, and I believe that the existing system is one which is much superior to the much vaunted Continental system. But we shall have to destroy it; it is not quality but quantity we shall require. You have placed the Government in the hands of the masses, and you must therefore give them education. You must take education up the very first question, and you must press it on without delay for the peace of the country."—*Ibid.*

SCIENTIFIC INTELLIGENCE.

—Artificial meerschaum is now prepared for commerce, according to the Chemical News, by mixing 100 parts of silicate of soda, at 35 degrees, with 60 parts of carbonate of magnesia and 80 parts of native meerschaum or pure alumina—the mixture to be carefully pulverized, finely sifted, boiled with water, and placed in porous moulds. It is presumed the "silicate of soda at 35 degrees" means silicate which, when in solution, would stand at 35 degrees Reaume; and the further presumption is in order that much of the "genuine meerschaum" displayed in big windows of pipe manufacturers is mixed according to the foregoing, or some other recipe.

Animal electricity—To the agency of friction, the amber of the ancients, the chemical action of modern voltaism, the mysterious properties of natural and artificial magnets or loadstone, and that peculiar vital principle inherent in certain animals, are due all the effects generally included in the comprehensive term electricity. If to these primary causes we add those of terrestrial currents and inequality of temperature, we provide, at least in theory, for all those atmospheric phenomena hitherto inexplicable upon any known data. If, as a certain eminent ecclesiastic remarked, "chance is a word to express our own ignorance," what a "chance" electricity must be. It is to the savant and the philosopher what "heart disease" is to the coroner and the faculty. Exactly a century ago galvanism was first discovered, and the term was applied to describe a species of electrical excitation, presumed at that time to differ materially in its origin from all other similar effects. Evidently the cause was referred to some muscular agency, which produced a peculiar sensation or taste when two dissimilar metals were applied, one upon the upper and the other upon the lower surface of the tongue. Sulzer who made this discovery, ascribed it to some vibratory motion produced in the nerves of the tongue, naturally a highly sensitive organ, and inferior in that respect only to the eye. Galvani, whose name is familiar with the celebrated experiments upon the limbs of frogs freshly killed, more fully developed this theory, and was the father of a new school, which, while recognizing

the cause of these post-mortem effects to be connected with electricity, yet affirmed that they were due to some especial modification of that unknown agent, residing solely in the animal system, and consequently bestowed upon it the appropriate name of animal electricity. The celebrated Volta was the first to successfully dispute this view of the subject, and to establish the identity of the origin of galvanic and electric phenomena. Recent experiments have confirmed the theory that animal electricity does not owe its origin to the formerly imagined action of the nerves or muscles, but emanates directly from a purely chemical source, the exciting cause being generated by the contact of the air with the incipient decomposition of the freshly-killed animal. Bearing in mind that a liquid, but very slightly saline, in contact with animal substance is an electrometer, it is easy to perceive that the so-called muscular current is nothing more than the current produced by their contact. To put beyond a doubt the question that a live muscle would generate electricity, which it could not produce when dead, contact has been made between the muscles of a live animal and the wires of a galvanometer, without the latter evincing the slightest sign of an electrical current. Moreover, if a portion of muscle be separated from the body of an animal freshly killed, and placed in communication with a galvanometer, a feeble degree of electricity is demonstrated. According to the opinion of a member of l'Academie Française, this is due to the influence of oxygen upon the flesh, a cause always existing when the muscles retain their normal state of irritability. Assuming that animal electricity was due to the cause surmised by Galvani, the evidence of the current would cease so soon as the muscles become completely inert, or, so to speak completely dead. But the reverse is the fact. The more decomposed the flesh becomes the stronger are the advances of its electrical condition, and when it has acquired a state of almost total putridity it imparts the maximum deviation to the astatic needle. That the presence of a saline liquid is necessary to these electrical effects is proved convincingly by several circumstances. One is that meat newly salted becomes electrical in proportion to the penetration of the solution, and the other that cured meats, whether beef, pork, or fish, evince a high state of electrical excitation, but becomes capable of affecting the galvanometer so soon as the animal is killed, and its power increases with the putrefaction of the body. A small addition of common salt to the blood immediately increases its electrical sensibility. If the epidermis of an animal be removed the under layers of cuticle are highly electrical, as experiments upon frogs have demonstrated, and this condition is still further augmented by the addition of a saline solution. From these results we are justified in assuming that animal electricity in its original symptoms is a delusion, and that without the intervention of some slightly saline liquid the nerves and muscles are *per se*, powerless to afford the smallest evidence of an electrical current. Unless a chemical action can be set up there is nothing to indicate the presence of that vital muscular agency which the first experiments in connection with the subject led the older philosophers to insist upon and adhere to. The animal current, which they so fondly propounded and believed in, is simply an ordinary electrical current produced chemically by the contact of a saline solution with animal matter, in which combination the salt acts the part of the electrometer. Adopting this view of the question it is easy to perceive that the development of animal electricity, in invalids and diseased organs, instead of being due to the cause originally entertained, is solely the consequence of chemical decomposition. Thus, for instance, the mucous membrane of the mouth becomes electrical in patients suffering under disease of the stomach or digestive organs, and strong evidences of it are manifested in malignant, cancerous, and other ulcers of a dangerous and fatal type. All animal excretion are electrical, and urine possesses this property in so remarkable a degree as to cause the needle of a galvanometer to make a complete revolution of the dial. The electricity of fishes results from an alkaline solution in the cells of the electric organs, and manifest itself very powerfully. All the effects of animal electricity may therefore be regarded as closely resembling those of fermentation and putrefaction, and to depend not upon any muscular or nervous hypothesis, but solely upon an incipient chemical decomposition in combination with chemical electrometers.—*The Engineer.*

Preserving the bottoms of iron ships.—Welch's preservative cement is the last of the many compositus tried in England for preserving the bottoms of iron ships. It is an elastic cement composed of certain stone grits and bituminous substances, and with this the ship's bottom is coated with a layer about 1/32d of an inch thick. When firmly set a liquid cement is laid on with a brush, and on this latter is transferred a metallic facing of copper-dust, a liberal dusting of the copper facing with fine stone grit completing the process. Two vessels partly coated with this composition just returned from a twelve-month's voyage to China were covered with barnacles except where the composition was applied which was perfectly clean and presented the appearance of bright copper.

Counterfeit Creosote.—A large proportion of ordinary creosote is simply carbolic acid. But the pure creosote, which constitutes the larvymosal property and peculiar smell of smoke, is quite a different substance, and may be distinguished from the false, as shown by Rust, by its behavior with collodion. A mixture with this latter and carbolic acid gives a gelatinous precipitate, while with true creosote the collodion remains clear. Dr. Hager gives another test. To a weak solution of iron, a few drops of

ammonia are added until the precipitate which originally forms is dissolved. Carbolic acid communicates a blue or violet tinge to the solution while genuine creosote gives a green color, afterward turning to brown.

The Appearance of the Sun from the North Pole.—To a person standing at the north pole, the sun appears to sweep horizontally around the sky every twenty-four hours, without any perceptible variation during its circuit in its distance from the horizon. On the 21st of June, it is 23 degrees and 38 minutes above the horizon,—a little more than one-fourth of the distance to the zenith, the highest point it ever reaches. From this altitude it slowly descends, its track being represented by a spiral or screw with a very fine thread; and in the course of three months it worms its way down to the horizon, which it reaches on the 23d of September. On this day it slowly sweeps around the sky, with its face half hidden below the icy sea. It still continues to descend; and, after it has entirely disappeared, it is still so near the horizon that it carries a bright twilight around the heavens in its daily circuit. As the sun sinks lower and lower, this twilight grows gradually fainter till it fades away. On the 20th of December the sun is 23 degrees and 38 minutes below the horizon, and this is the midnight of the dark winter of the pole. From this date the sun begins to ascend, and after a time his return is heralded by a faint dawn, which circles slowly around the horizon, completing its circuit every twenty-four hours. This dawn grows gradually brighter; and on the 20th of March the peaks are gilded with the first level rays of the six months' day. The bringer of this long day continues to wind his spiral way upwards till he reaches his highest place on the 21st of June, and his annual course is completed.—*lb.*

The Sky an Indicator of the Weather.—The color of the sky, at particular times, affords wonderfully good guidance. Not only does a rosy sunset presage good weather, and a ruddy sunrise bad weather, but there are others tints which speak with equal clearness and accuracy. A bright yellow sky, in the evening, indicates wind: a pale yellow, wet: a neutral gray color constitutes a favorable sign in the morning. The clouds are again full of meaning in themselves. If their forms are soft, undefined, and full feathered, the weather will be fine; if their edges are hard, sharp, and definite, it will be foul. Generally speaking, any deep, unusual hues betoken wind or rain; while the more quiet and delicate tints bespeak fair weather. These are simple maxims, and yet not so simple but that the British Board of Trade has thought fit to publish them for the use of sea-faring men.—*lb.*

NECROLOGICAL INTELLIGENCE

—Dr John Ogilvie, author of "The Imperial Dictionary" and other educational works of merit, who died on the 21st inst., at his residence, in Aberdeen, was a native of Banffshire, and after finishing his University course, he devoted himself for some time to teaching. He was for upwards of thirty years mathematical master in Gordon's Hospital, from which position he retired some seven or eight years ago. Since then he has devoted himself principally to the labours of a lexicographer. His chief work is "The Imperial Dictionary," a book of considerable worth. Dr. Ogilvie was a quiet, unostentatious, scholarly man, and was highly esteemed by all who knew him.

The late Earl of Rosse.—An obituary notice of the late Earl of Rosse, Baron Oxtantown, Knight of St. Patrick, who died some days ago, at his town house, in Dublin, aged sixty-seven, appeared in our last publication. This distinguished nobleman, whose family name was Parsons, was a member of the House of Commons from 1821 to 1834, and a member of the House of Lords since 1845, being elected in that year one of the representative peers of Ireland. He was President of the Royal Society and Chancellor of the University of Dublin. He stood high in his own neighbourhood as a good landlord and country gentleman; but it is by his great merits as a practical astronomer and as a patron of astronomical science, more especially as the constructor and proprietor of the most powerful telescope in existence, that he has gained a world-wide renown. The matchless instrument erected by his Lordship, at a cost of more than £20,000, in the park adjoining his mansion of Birr Castle, Parsonstown, in the King's County, occupied sixteen years in its construction, under the noble owner's personal direction and superintendence. It is a reflecting telescope, consisting of a speculum or mirror, 6 ft. in diameter, placed at the lower end of a huge tube, which is suspended to massive scaffolding, between piers of solid masonry, about 50 ft. high, with step-ladders, platforms, and galleries affording convenient access to the point of observation near the upper end of the tube; as the astronomer, while using this kind of telescope, does not look towards the star or other celestial object itself, but looks into the interior of the tube, and sees the image of that object reflected upwards from the mirror. The manufacture of the circular disc of bronze, measuring 6 ft. across and weighing about four tons, with a very slight concavity of its upper surface, which must be shaped not exactly as part of a sphere, but must depart from the spherical proportions only to the ten-thousandth part of an inch, was a most difficult task of metallurgy; and the history of Lord Rosse's studies and experiments, for the purpose of solving this problem, shows him to have been a man of great ingenuity and extraordinary perseverance. In all the processes of compounding the metals, designing the mould, casting the bronze, grinding and polishing the mirror, and in contriving special machinery for

these last operations, the Earl of Rosse took the most active part, himself ordering the workmen, and constantly superintending their labours. After many years of toil, frequent disappointments, and the spending as much money as would have purchased a fine estate, he achieved a perfect success. He made, likewise another reflecting telescope, with a mirror 3 ft in diameter; but it was by means of the great six-foot telescope that he was enabled to carry out a series of observations of the remotest star-clusters, or nebulae, reported by him to the Royal Society in 1861, and published in their *Philosophical Transactions*. The general reader will find, however, in Mr G. F. Chamber's compendious volume of "Descriptive Astronomy" (recently published by Macmillan and Co for the delegates of the Clarendon Press in Oxford University) an account of the most important of these observations, beautifully illustrated by a set of wood engravings which show the appearance of each nebular group as viewed by Lord Rosse, compared with the imperfect view of it previously obtained by Sir John Herschel. The difference is particularly striking in the case of the so-called "crab" nebula in the constellation Taurus, and in that of the "dumb-bell" nebula in Vulpecula; while the discovery of the spiral or whirlpool nebulae is acknowledged to belong to Lord Rosse. It is probable that these observations may lead to the explanation of some of the most interesting questions relating to the constitution of the starry heavens. Lord Rosse was a man of whom the Irish Peerage and the whole nation in the United Kingdom may well be proud: his example has done honour to his native country and to the present age, as well as to his rank and station. He is succeeded by his eldest son, hitherto known as Lord Oxmantown, who was born in 1840.—*Illustrated London News*.

METEOROLOGY.

—Abstract of Meteorological observations.—From the Records of the Montreal Observatory, lat 45° 31 North-Long. ; 4h 45m. 11 sec West of Greenwich, and 182 feet above mean sea level. By CHARLES SMALLWOOD, M.D., LL. D., D.C.L.

DAYS.	Barometer corrected at 32°			Temperature of the Air.			Direction of Wind			Miles in 24 hours
	7 a.m.	2 p.m.	9 p.m.	7 a.m.	2 p.m.	9 p.m.	7 a.m.	2 p.m.	9 p.m.	
1	30.001	29.999	29.930	-0.9	10.0	16.4	W	W	W	279.20a
2	29.747	.674	.550	20.6	26.7	20.2	N S W	W S W	W S W	219.10a
3	.562	.476	.700	22.4	32.6	31.7	W	W S W	W S W	110.00
4	.551	.437	.389	-2.0	10.9	41.2	W	W	W	97.90a
5	.400	.497	.601	8.4	30.7	9.4	N E	N E	N E	101.04
6	.601	101	28.710	9.2	24.2	31.7	S E	S E	W	66.10b
7	.161	.279	29.432	13.4	23.4	9.7	W	W	W	290.17
8	.651	.696	.776	-8.2	4.7	-6.6	N N W	N N E	N E	126.24
9	.831	.832	.759	-12.5	7.0	-2.1	W N W	W by N	W	246.24c
10	.311	.500	.552	-2.3	6.4	5.1	N E	N E	W	206.12d
11	.579	.714	.767	0.0	7.4	-5.6	W	W	N E	97.24
12	.951	.952	949	-13.8	-5.0	-12.0	N E	N E	N E	191.20
13	.976	.999	30.021	-13.9	7.7	-4.6	N N E	N E	N N W	98.20
14	30.000	30.000	29.999	-6.5	5.5	-5.0	N E	N E	N E	214.12
15	29.820	29.714	.649	-5.1	8.2	5.8	N E	N E	N E	21.10
16	.448	.355	.399	9.9	17.8	13.4	N E	N E	N E	99.24
17	.325	.311	.350	7.3	16.9	18.4	W	W	W	82.10e
18	.561	.744	.900	4.2	17.3	0.0	W	W	W	97.24
19	30.101	30.203	30.290	-10.1	7.3	-0.7	W	W	W	85.29
20	29.900	29.643	29.650	1.7	13.7	16.7	N E	S W	S W	91.11f
21	30.020	30.161	30.101	17.3	32.6	19.3	W	W	W	129.10
22	29.500	29.247	29.030	26.4	33.6	34.1	S	S	S	101.00g
23	.075	.437	.847	20.7	21.4	7.3	N N W	N E	W	327.14h
24	.860	.425	.560	4.3	15.7	22.5	S W	S W	S W	101.00j
25	.962	.624	.401	6.9	7.4	23.3	N E	N E	N E	214.10k
26	.250	.512	.714	32.2	38.3	17.6	W	W	W	327.14
27	.452	.201	.051	17.4	36.3	34.7	N E	N E	N E	121.16l
28	.501	.620	.763	20.0	23.3	15.7	N W	N E	N E	212.00m
29	.700	.748	.851	13.3	18.9	12.7	W	W	W	124.11n
30	30.026	30.167	30.250	-3.3	6.9	-4.4	N W	W	W	107.24
31	.147	.116	.098	-4.6	20.2	9.4	W S W	W S W	W S W	101.44

RAIN IN INCHES.—g 0.176; k 0.120; l 0.381; m 0.026
 SNOW IN INCHES.—a 1 napp.; b 5.74; c 0.70; d 0.17; e 0.10; f 4.10; g 4.86; h 0.94; j 2.20; k 1.75; l 1.70; m 2.80.

REMARKS.

The mean temperature of the month was 10° 99 degrees.
 The lowest temperature on the 12th day was -14° 5 degrees below zero; the lowest temperature on the 13th day was -15° 1 degrees below zero. This was the lowest reading of the month, and the thermometer read only 7 times above .32° degrees during the month.
 The mean temperature at Montreal for the month of December for a series of years has been recorded as 19° 10 degrees.
 The same at St. Martin, Isle Jesus (9 miles due west of Montreal), for a series of years, was 17° 4C degrees.
 The mean temperature of December, 1866, at Montreal was 24° 12 de-

grees, showing that the mean temperature of last December (1867) was lower by 13° 13 degrees than December 1866, and 8° 11 degrees lower than the mean temperature of December for a series of years at St. Martin, Isle Jesus; but at St. Martin, Isle Jesus, December, 1859, showed a lower temperature by 2° 06 degrees than December, 1867, at Montreal, but this was caused by three "cold terms" which occurred during that month, when the thermometers read respectively, -13° 9, -16° 9, and -32° 6 degrees below zero as the minimum temperature.

The Meteoric Display.—Dr. Smallwood in a letter to the Montreal Gazette writes that although the Meteoric Shower was not visible at Montreal, owing to the cloudy state of the sky, yet science has achieved a great victory in predicting within a very short space of calculation, the time of its appearance in places more highly favoured than ourselves with a clear sky. Yet he thinks there were more physical phenomena observed here which he believes should be placed on record. He says that:

The Barometer on the 11th day at 9 p. m. (time of full moon) attained an altitude of 29.649 inches with a wind from the W.S.W., and a temperature of 42° 4 degrees. A small and inappreciable amount of snow fell during the afternoon of that day, and the day closed with a cloudy sky; during the night the wind veered to N. E. The mean temperature of the 12th day was 37° 4 degrees and the day was cloudy, with a falling barometer; on the 13th day, at 7 a. m., it stood at 29.290 inches, wind W. by N. sky clear, and the mean temperature of the day was 29° 8 degrees. At 9 p. m. the Barometer was at 29.446 inches.

From this time although the wind was W. by N. (which is generally accompanied by a rising column,) a very sudden depression occurred; at mid-night the indications were 29.224 inches and at 4 a. m. 14th [the supposed time of the appearance of the greatest number of meteors] the barometer was 29.187 inches, wind still W. by N.; the thermometer 24° 2 degrees. A little after midnight heavy cumulus clouds formed and passed from the N. W., until the whole of the heavens were covered which increased in density, so as to obscure in some measure the moon's light [which was three days after full] and rendered invisible any meteors that might have crossed the earth's orbit. The cloudy state of the sky mostly continued, and culminated in a snow shower which lasted 8 hours 10 minutes. The barometer at 9 p. m. showed a reading of 29.451 inches; thermometer 19° 7 degrees, wind W. S. W., and a clear sky.

The observations made at the present time under more favourable circumstances than our own, will tend to complete in a satisfactory manner, the determination of the "radiant point." Hitherto, observers have placed it midway between the stars Zeta and Epsilon in the constellation Leo. Little doubt does exist that the orbit is circular, or nearly so, or at least, that the descending node of the orbit coincides very nearly with its aphelion or perihelion distance. No doubt at present exists respecting the planetary motion of meteors. This point is already established; all that remains in doubt is the exact form and position of the orbit described by the meteor flight around the Sun. The estimated thickness of this meteor is 60,000 miles, and the mean distance of the meteors from the Sun is somewhat less than the earth's mean distance—These are approximate elements, and confirmatory observations are yet wanting, which the late observations may supply.

MISCELLANEOUS INTELLIGENCE.

—The Artesian well in Louisville is now being enlarged to six inches in diameter and 2,200 feet in depth, which will make it the largest in the world.

—An old affidavit made by George Peabody in 1814, has been hunted up at Newburyport in which the now princely millionaire swore that he only possessed \$200 worth of taxable property.

—A man in Providence, R. I. claims to own the oldest book ever printed in America. It bears the imprint "Doctrina christiana, Mexico, 1544."

—The meteors fell in such profusion in Leavenworth on November 14, that the deck hands on board the steamer Hensley became frightened, and, falling upon their knees, called upon God for mercy, satisfied, as they were, that the day of judgment was at hand.

A new use for paper.—A new process has been discovered, by which paper can, by chemical and mechanical influences, be rendered as hard as hickory wood, and may be manufactured into a variety of articles hitherto made of wood, tin, copper, and iron. The substance produced is a non-conductor of heat, impervious to the action of acids, and not liable to be injured by cold or heat. It can bear a heat of three hundred Fahrenheit without injury. When the preparation is soft it is shaped in moulds, and made into water-pails, wash-basins, pitches, &c.

When further improvements are made articles formed of paper will come into competition with crockery and china. The White House and the Departments in Washington have been already supplied with sets of paper water-pails, ice-coolers and spittoons. A factory at Greenpoint, L. I. is now engaged in developing the process, which of course is a secret.