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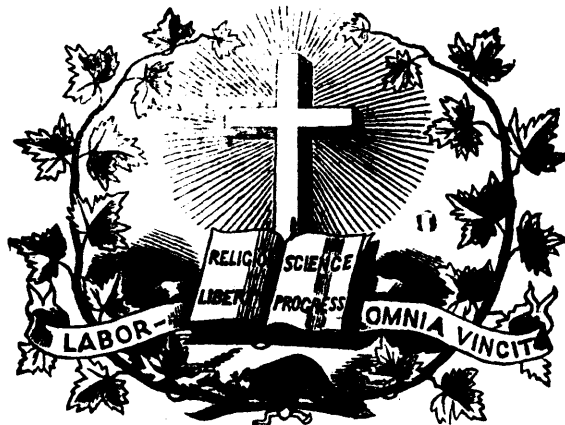
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"The Theory of 'useful' Education."

Paper read by the Rev. H. BELCHER, M. A., before the college of Preceptors.

1. In speaking of "useful" Education, I do not entertain the question discussed by Mental Science—What the "useful" is. The sense in which this word is employed by some writers on Mental Philosophy—that is, to mean, and to embrace in its meaning, whatever conduces to happiness—is not the sense Lord Palmerston's oracle, the Man in the street, puts upon the word. Mr. Stuart Mill has eloquently, in his famous Essay, expressed the highest views of the useful; but the Man in the street means, by the Useful, a commodity quickly convertible into money. He understands a useful education to be the cheapest and quickest acquisition of knowledge that can be turned without trouble to the service of trade. And if his view be admissible, the educational difficulty is solved: and Mr. Herbert Spencer's conclusion is correct:—

"If men are to be mere cits, mere porers over ledgers, with no ideas beyond their trades: if it is well that they should be as the Cockney, whose conception of rural pleasures extends no further than sitting in the tea-garden smoking pipes and drinking porter; or as the squire, who thinks of woods as places for shooting

in, of uncultivated plants as nothing but weeds, and who classifies animals into game, vermin, and stock,—then indeed it is needless to learn anything that does not directly help to replenish the till and fill the larder."—*Essays in Education*, p. 78.

This work of Mr. Spencer's is remarkable both for the extreme forcibleness of his expressions, and for a large ignorance of education as it actually exists. For instance, he thinks that, in giving a boy a classical education, we are endeavouring to conform simply to public opinion (p. 2). That a lady learns Italian and German that she may be able to sing ballads in those languages, and command whispered admiration (p. 3). That History is taught in our schools as a mere tissue of names and dates and dead unmeaning events (p. 11).

Or again, that our education will make men careless of the architecture of the heavens, yet anxious in some miserable controversy about Mary Queen of Scots—or learnedly critical over a Greek Ode, yet pass by without a glance the grand Epic written by the finger of God upon the strata of the earth. These and similar misapprehensions of things as they are, disfigure the book, which embodies a popular enquiry into what useful education signifies.

But while he concludes in favour of experimental or natural science, as the highest vehicle of sound education, there is one aspect of the question he refuses, it would seem, to discuss.

Of commercial education—instruction in Reading, Writing, and Arithmetic—he says nothing. Accurately speaking, there is nothing to discuss. The most furious despot, it has been said, fails to tyrannize over the multiplication table; a Claudius could not succeed in forcing a new alphabet on his subjects. And it is within the safe limits of the alphabet and multiplication that the lowest forms of instruction contain themselves.

There is no room for opinion in these matters. To be the master of the three R's is no special credit—but to fail in the three R's is a very special disgrace. To argue about their usefulness, is like, in an argument, whether clothes ought to be decorative preferably or comfortable

preferably, one should begin to argue as to the utility of wearing clothes at all.

But useful education, in the commercial sense of it, embraces commonly other things—Bookkeeping, History, Geography, and possibly a smattering of French. But it would be hard to shew how these things can be brought straight away from the school desk to be applied in the counting-house. Bookkeeping, as taught in schools, and Bookkeeping as found in merchants' offices, necessarily vary. The manuals of instruction provides types, of which business houses afford variations; but training in the manuals does not necessarily elicit intelligence enough to grapple with the variations. History is not now taught, according to Mr. Spencer's notions, as a dry collection of quarrels between kings, bloody conspiracies, and unfruitful dates; but, whatever method of teaching History be adopted, the study has no immediate bearing on commercial life. Its obvious sphere is the past. But what has mercantile life to do with the past? The balancing of last year's books is the furthest point behind him a commercial man needs to keep in view. Geography, indeed, brings, something more in its train; by it said, the young employé knows whether he has spelt the address of a foreign letter rightly, or avoids sending a despatch to India via St. Petersburg. But the truer part of the study, Physical Geography, will aid him no further than the knowledge of the time and track of a China tea-ship; while, in the majority of cases, all the interesting information identified with that pleasant study will be as "useful" to him as a quotable acquaintance with Martial's famous description of a Roman Day. (Epigr. iv. 8.)

French is occasionally enquired after—but of what kind is the French to be? Is it the French of Brachet, and of Littré: the method which has elevated the study of that language into the vehicle of a sound training in Philology: or is it to be the French of the Parisian Stock Exchange? If the former, the time required is more than the commercial alumnus is inclined to bestow; and if the latter, he will seek the commodity in vain. French business slang can no more be taught in schools, than a sound knowledge of the marks on old China.

That these things are taught at all must arise, not from the sense that History, Geography, and school French are marketable goods of ready pecuniary value—but from a sense, unconsciously expressed in conduct, that, notwithstanding loud assertions to the contrary, the "useful" is not the true end in view.

In touching on this branch of the subject, it may be fairly asked: if commerce demands a training *ab ovo*, why not apply the principle further? Why not make the work, "Every man his own lawyer," a school reading-book. Every man has to deal with law: we have to pay taxes—must be tenants or land-lords, employers or employed—must make wills—may be legatees—may have to serve on juries—and, most likely, shall have to appear in courts in some capacity—many hope to get married,—and we shall all die: all instances where a little pr or knowledge of law would have been clearly useful. Surely, in schemes of "useful" education, here is a clear case. I might press the case of a Porphyro-genitus—some one born to a throne, or another born to be a hereditary legislator: here the reflections are obvious. Or, again, put the case of a lad intended for the army: he, in all probability, will be sent to India; he certainly must know the Queen's Regulations: why not train him in the Indian vernacular? Why not develop his memory by frequent repetitions of the instructions for musketry exercise?

These suggestions are doubtless absurd: but how

more absurd than putting a young fellow through those facings which make him the lord of the ledger? How often have we seen noble young intelligences sent into that defile—to emerge like the Romans from Caudium *sans culottes*, and with their intelligence darkened through that insulting discipline.

2. In England, in America, in the Colonies, and in France, what is understood by a commercially useful education ought to be impossible. There is no citizen of these countries who may not reasonably expect to be called, at some time or other, to functions exterior to his profession, likely to demand knowledge other than professional knowledge, and powers other than professional powers. Where is the barrier to the advancement in these countries? With ourselves, every position except the throne is open to ambition. In France and America, the position analogous to the throne is within the attainment of anyone. There is not a boy now at school who may not hereafter assist in making Imperial laws, or at any rate in administering Imperial jurisdiction. There are very few boys now at school who may not hope to direct or inspire some one of the smaller sources of feeling and opinion which really mould the opinions of the whole.

These are facts of our political alphabet—for they have passed out of controversy years ago,—and it is presumable that, in thinking of education, they should be allowed due weight. If this influence is granted, education should be based on some of the possibilities, of life. If there is to be a field of imagination in the conduct of education at all, it will be found in endeavouring to train the mind to instruct itself, or perhaps of giving it such an impulse in the direction of the higher culture that nothing short of violent counter-motives will succeed in stopping it.

A great people, or a great cause, must be ruled by great ideas; and a nation which has thickly raised palaces of gratuitous instruction for the poor,—professedly because a schoolmaster is more economical than a Prison Rate, but really from a higher and more generous motive,—must plead to being under the influence of a great idea. The true idea of education is the cultivation of wide sympathies, based upon accurate knowledge of certain branches of culture, without any reference to immediate commercial value or utility.

3. But if this estimate be true, it is very far wide of the mark aimed at by even those who would repudiate a commercial education as their terminus, but who still want something "useful" in return for their money.

The question immediately comes up,—were are they to get it? By a general consent in certain quarters, the Classics have been banished from their former supremacy, although I may truly say, in my belief, "*tamen usque recurrent*." It is generally known that six, perhaps ten years must elapse for the production of that imcommunicable something consequent on high classical culture; and that, to acquire this result, was the end of the old Liberal Education.

The notion of a Liberal Education is fading away before the doctrine of results. The burden of incessant examination is almost more than the fine strain of classical scholarship can bear. And the idea that Latin Hexameters and Greek Prose have any immediate relationship to the concerns of every day life cannot be sustained. Hence there is an impatience of classical training. Most people group it and a taste for old china or pictures together. They characterize it as useless learning. The classes who owe most of the resurrection of the Classics from the tomb are the middle classes; for Greek and Latin, historically, are a revolutionising influence. When Horace sprang out of his ashes, he

came to Colet and to Erasmus as the gay sceptic in whose company they could laugh down the superstitions of the time. It is by a strange turn of the wheel, whose backward whirl a well-known Horatian maxim bids us forecast, that the children of the Renaissance assail those very studies which alone can be called liberal. No commercial educationist of our time could possibly feel so much suspicion and dread of a young fellow with a good knowledge of Greek, as did the average English gentleman of the sixteenth century. Each in his place would heartily join with that old Rabbinical anathema, "Cursed be he that keepeth a pig, or that teacheth his son Greek." And yet a very great man, who has touched more points in the circle of knowledge and experience, than many men can ever hope to do, wrote these words to a friend:—

"What I feel is, that the relation of pure science, of natural science, modern languages, modern history, and the rest, to the old classical training, ought to be founded on a principle, and that these competing branches of instruction ought not to be treated simply as importunate creditors, that take one shilling in the pound to-day, because they hope to get one shilling in the pound to-morrow, and in the mean time have a recognition of their title.

"Its recognition of title is just what I would refuse: I deny their right to a parallel or equal position; their true position is ancillary, and as ancillary it ought to be limited and restrained without scruple as much as a regard to the paramount matter of education may dictate.

"The truth I take to be, that modern European civilization, from the middle age downwards, is the compound of two great factors—the Christian religion for the spirit of man, and the Greek (and in a secondary degree the Roman) discipline for his mind and intellect.....

"The materials of what we call classical training were prepared—and, we have a right to say, were advisedly and providentially prepared—in order that it might become..... the complement of Christianity in its application to the culture of the human being."—(Rt. Hon. W. E. Gladstone, Public Schools Commission Report, Vol. ii., p. 49.)

No one in our time will attempt to dispute that very bountiful culture may not be attained without intrinsic knowledge of the classical authors.

But the truth being that, while the ideas of Greece and Rome have passed into our literature to such a degree that no student can fail to imbibe their influence, there is not always individual need of reference to the sources and springs of literary inspiration. Hence they are the common heritage of all educated men—of him who has learnt the Greek geometry and builds a bridge, and of him who exemplifies the fire and pathos of tragic composition. The material ideas of Athens and of Rome are now in the very pulse of culture.

But as the highest culture goes beyond ideas to their ultimate form, and as these ideas must be sought for in the exquisite shapes of their original diffusion, and as language has his share of art, and is capable of being made intrinsically beautiful, so must the highest education be sought in the medium of these studies.

The common run of feeling being, however, that these studies are not "useful," let us search for the useful in what remains. There remain only Mathematics and Natural Science. For the abolition of the severe study of the ancient languages, with their collateral topics, abolishes also the study of modern languages, and with them the muse of History. No one will contend that the acquisition of French or German, in the way that they can be most easily acquired, constitutes an education. A courier who initiates travellers into the ways and doings of some foreign town, is often very facile in six languages, and lives by that knowledge; but somehow we have grown to associate a great facility in continental languages with the same sort of clever-

ness which makes a facile billiard player or a facile bookmaker. A child may pick up a knowledge of at least two languages in the nursery, by association with a French or a German *bonne*, but the absence of any effort in acquisition deprives the process of any educational value.

History, as a severe study, cannot be prosecuted with either consistency or consecutiveness, if we omit from calculation the authorities, the evidence, the art, the religion of a thousand years. Clio cannot remain with those who have expelled the Homeric narrative equally with the language of the New Testament, and who forbid us read with Tacitus what manner of men we were in the German forests, or with Cæsar of our own land as he saw it.

In Mathematics, however in its early branches, the apostles of Useful Education claim to find something sound and reliable. But it is not quite clear that the object is surely attained. That Mathematics have been made in England the sole means of culture in the early stages of education, does not come within my knowledge; but that the attempt has been seriously made elsewhere, appears from the following remarks of the late Mgr. Dupanloup. Speaking of the Ecole Polytechnique, he says:—

"Mathematics are often a study too laborious, too hard for these young scholars.....

"Beyond all doubt, Mathematics give consistency to, and ripen, by vigorous and useful exercise, by their tollsome intellectual gymnastics, reflexion, judgment, reasoning powers; but they require absolutely that these faculties already possess a certain vigour and development, otherwise they crush them..... Always, when Mathematics are allowed to have a despotic or premature influence in education, the result is disastrous.

"Not only do they obliterate from the mind the grace, brilliancy, generous sentiments and kindly feeling, due to imagination and poetical feeling, but they destroy the sense of moral justice.....

"These are disastrous results.....and what do we gain by incurring them? We often make the mathematician at the expense of the man.....and often we have, perforce, to regret the absence of both the mathematician and the man."

If education is intended to adapt men for the world, Mathematics minister to the result feebly. There are hundreds of daily events it is impossible to force into mathematical relationship. The very rigidity and accuracy of the study are drawbacks. It is no use trying to adapt methods, that must eventuate in neat solutions or nothing, to the habits of a being whose ordinary life is a series of petty uncertainties. "Mathematics," it has been well said, "have been brought into matters where their presence is of doubtful utility. If they have given precision to literary style, that precision has been sometimes carried to excess. If they have tended to clearness of expression in Philosophy, that very clearness has sometimes given an appearance of finality not always true. If they have contributed to definition in Theology, this definiteness has often been fictitious, and has been attained at the cost of spiritual meaning."—(*Quarterly Review*, Oct. 1867, No. 246.)

The famous attack of Sir William Hamilton on mathematical study (Hamilton, "Discussions," pp. 313, 314, &c.) has had this advantageous effect: that, in the rejoinders it evoked, all that could be said in their favour was said by Whewell, and De Morgan, and Mill.

Taking Mill as the foremost opponent of Hamilton on this as on other topics, there are passages in his apology for Mathematics fraught with instruction.

"Descartes," says Mill ("Mill on Hamilton," p. 610 ff.), "is the completest type history presents of the purely mathematical type of mind, that in which the tendencies produced by mathematical cultivation reign unbalanced and supreme. This

is visible not only in the abuse of Deduction, which he carried to a greater length than any distinguished thinker known to us, not excepting the Schoolmen, but even more so in the character of the premises from which his deductions set out.

"And here we come upon the one really great charge which rests upon the mathematical spirit in respect of the influence it exercises on pursuits other than mathematical. It leads men to place their ideal of science in deriving all knowledge from a smaller number of axiomatic premises accepted as self-evident and taken for immediate intuitions of reason. This is what Descartes attempted to do and inculcated as the thing to be done."

And Mr. Todhunter (*Conflict of Studies*, pp. 24, 25), says:—

"The time devoted to these subjects (Mathematics), viewed as a discipline, is too long. While engaged in these pursuits, a student is really occupied with a symbolical language, which is exquisitely adapted for the class of conceptions it has to represent, but which is so very far removed from the language of common life, that, unless care be taken to guard against the evil, the mathematician is in danger of finding his command over the vernacular diminished in proportion as he becomes familiar with the dialect of abstract science."

These remarks, if they are worth anything, will equally well apply to those branches of Natural Science capable of pure mathematical treatment, and commonly so treated. Mechanics and Hydrostatics, even when taught in an elementary way, are usually identified with some simple algebraical and geometrical process. The knowledge of even the simpler philosophical instruments used in Physics, such as Atwood's Machine or Nicholson's Hydrometer, is gained in schools by diagrams and a few plain problems. Everyone is aware that, to trust a schoolboy with the free use of a good instrument, is a guarantee for its quickly getting out of order, and economy dictates keeping him to books and drawings for this part of his education. Generally speaking therefore, we may assume that whatever tells against pure Mathematics tells also against these studies. Hence there is just as much relationship between Simple Equations and the actual affairs of commercial life, as between the latter and Greek Iambics,—just so much and no more.

Mr. Spencer hardly touches on the utility of Mathematics. "No one," he says, "needs to have the value of this division of Abstract Science insisted upon" (p. 16). He indicates that by them estimates are framed, commodities bought and sold, or accounts kept. He means here Commercial Arithmetic. And he goes on to dilate on various works of engineering as illustrative of geometrical truth. But the question is not whether Arithmetic is good for a City clerk, or Geometry for an engineer, about which indeed there will be no dispute, but how far Mathematics can be made the vehicle of "useful" training for the largest number.

It has been already seen how small is the relationship of Mathematics to the lives of the majority of us. We do not ask for a technical education of disguise, but for good discipline, for a means of developing and balancing the judgment, of strengthening the memory, of cultivating taste, of chastening the mind into an attitude of patience, and of inducing that large aptitude for knowledge characteristic of the well-educated man. Many thinkers have given their verdict against Mathematics as "useful" even in this wide sense; but Mr. Spencer, who might have said so much, has said nothing.

Withdrawing from this topic, there now remains to discuss the utility of Natural Science in education.

One of the warmest advocates of a liberal education would have refused Natural Science a place in the schemes of a school. "I have recommended," says Dr.

Whewell, writing to the Commission on Public Schools, that lectures on Natural History, to which I would add Chemistry and Physics, should be given at public schools, not as part of the business of the school, but occasionally, so as to attract and stimulate the more active-minded of the boys, and to help them where they had a turn for such pursuits;" and he goes on to remark that, seeing remarkable men lecture in a remarkable way, will evoke any natural talent in a special line, but considers Natural Science as a basis of education inadmissible.

At first we should be inclined to differ in many points from Dr. Whewell. There is nothing in education, which seems capable of immediate relationship with actual life, comparable to Natural Science. The value of scientific modes of thought to a man in active life is extremely great. The student of organic nature, and the man of the world, have much in common. Both work tentatively; both will fail once, and twice, and yet the third time will conquer; both find the stern in need of essential knowledge, where perplexity stops action; and whether one is endeavouring to solve the problem of all life, and the other is engaged in solving the problem of his own life, they will feel much difficulty, and therefore much sympathy, in common.

We should here be inclined to cry out Eurakamen,—the question is answered at last; and if we could turn all our children into original investigators, we should indeed have mastered the difficulty. If we set the young ones to feel their way from *formula* to *bacterium*, from *bacterium* to *protococcus*, and so on through early cell-life to the complexities of the full animal organism, we should be on the right track. It is indeed what Professor Clifford, if I understand him rightly, would have us do. He would adopt the policy of the New-York boarding-house hero, Major Pawkins,—“Run a moist pen slick through everything and start fresh” in each case. “We may,” says he, speaking of teaching Chemistry, “follow Dr. Williamson's method, shew the children how to make Carbonic Acid, and then pour it on a candle and put it out, burn Hydrogen to produce water, and so forth. When a few of the commoner substances are real things to them, whose properties they are familiar with, they may learn to weigh and to measure. Then the law of definite proportions becomes legitimate teaching, and the law of gaseous volumes.”—(*Nineteenth Century*, April, 1878.)

From this and other parts of the same article, we infer the author to mean that the child is to take nothing for granted in his beginning to learn science, and that his teacher's authority is to be checked by the child's independent investigation. He is to become a *tabula rasa*, on which may be inscribed the result of his own investigations.

Now among the commonest subjects in elementary Chemistry is Carbon Dioxide. Let Professor Clifford's "child" he set to examine this body by weight and by volume; let him be put to find out the synthesis of water by weight also, or what is simpler, the volumetric analysis of water, and judge the results. And we might fairly ask what institution is there, what system of education is probable, which will supply a large number of children with the machinery of the investigations in question?

As to Carbon Dioxide, Prof. Roscoe, in his well-known Text Book of Chemistry (pp. 89, 90), devotes an intricate diagram and a lot of printed matter to the mere outlines of the investigation,—one easily conceivable as being carried on for many hours by a fairly skilful hand without a definite analysis of the compound.

There is very remarkable discrepancy between this

enthusiasm for making our children into independent investigators, and the judgment of a practised educator like Mr. Todhunter : —

“ Very great credit is due to the [person who first imagined the well-known experiment to illustrate]—the proposition that *in vacuo* all bodies will fall through equal spaces in equal times,—“ but it is not obvious what is the special benefit now gained by seeing a lecturer repeat the process.

“ It may be said that a boy takes more interest in the matter by seeing for himself, that is, by working the handle of the air-pump The boy would also probably take much more interest in football than in Latin Grammar, but the measure of his interest is not identical with that of the importance of the subjects.

“ It may be said that the fact makes a stronger impression on the boy through the medium of his sight—that he believes it more confidently. I say this ought not to be the case.”

And Mr. Todhunter concludes that mistrust of the statements in scientific topics, where the truth has been clearly ascertained, is an *a priori* disqualification in the investigator.

So that, while the one prophet would send every boy with a taste for Physiology to the vivisector's trough, to rediscover the circulation of the blood, the other prophet denies that these operations are either investigations or experiments,—they are “ repetitions of “ observations made thousands of times before, whose “ educational value is more than dubious.”

But, granting that experimental science is possibly more adjacent to “ useful ” education in the main than other subjects, there are *in limine* two very damaging objections to its introduction into elementary education, —(1) its expense ; (2) the time occupied without definite progress being made.

1. As to the *expense*. The teaching of Natural Science by experimental methods is not self-supporting. Without endowments, without grants, without drawing nourishment from some copartnery in educational work,—it can never get beyond books, or tutorial statements. Unlike other teachers, a lecturer in Experimental Science must have a man to help him—a trained attendant ; while the expense of scientific instruments and materials is notorious. Any one acquainted with the space and accommodation required for sixteen or twenty students of Practical Chemistry will understand what would be required for six hundred ; and, given that there is a reasonable liberality in the matter of appertanances and teachers, he can compute the expense.

It will be a very long time indeed before the British father would consent to bear all the outlay necessary for such teaching or the British taxpayer allow large subsidies to educational institutions from the national purse. We might soon hear, if experimental teaching were widely adopted, loud sighs for the old times when the boys courted Polhymnia and Euterpe, the less exacting muses, ere they attempted to approach Urania, access to whom can only be made in a shower of gold.

Again, as to the question of *time*. Every one is acquainted with the great consumption of time involved in the study of Chemistry, in the laboratory,—for instance, an investigation analytically, or synthetically, of the simpler forms of crystallization, and the kindred processes.

It is presumable that laboratory work would not be allowed to become a mere amusement, and that it would be tested by results like other branches of education ; that is, it will be sifted periodically by the application of independent examinations.

This is a duty that no examining body has as yet dared to face. The University of London has indeed, within the last two years, established a system of examination in practical work, in its second examina-

tions for scientific degrees ; but in the primary or matriculation examinations, to which schoolboys come in large numbers, no such attempt has been made. Doubtless, the eminent men who have a consultative voice in the direction of those examinations, would treat the notion of practical examination of boys of sixteen or eighteen as beyond immediate reach. But, without some such touchstone, we should have no means whatever of putting a value on Professor Clifford's methods.

Yet, without experimental teaching, some branches of Natural Science are worse than useless as factors of education. It is very remarkable how quickly a boy of ready mind, with a slight knowledge of the languages, can master and use with facility the terms of scientific knowledge. Examination papers have made extraordinary revelations how this aptitude has deluded its possessor as to the extent of his knowledge. There is scarcely any examination paper that produces such hopelessly unpromising results as a Chemistry paper ; the proportion of nourishing facts to wordy chaff is so intolerably small.

It must therefore be felt that the educational value of Natural Science has yet to be determined. That it may be more showy and specious, and therefore more attractive to the ill-informed, who like sensation in education as well as in everything else, is obvious enough, but it will remain for our successors to appraise it at its true value.

Personally, I should rejoice to see the difficulties referred to obviated ; and, leaving the question of expense to those it may concern, in common with many educators, I should be glad to see any system adopted that would make us hasten more slowly. Having partially laid aside the tardy acquirement of Latin and Greek, we shall have to reconsider the wisdom of knowing how wisely to lose time. Men have complained, ere now, of the hours wasted, as they supposed, in doing a copy of verses ; but they may learn to see with equanimity their children waiting for hours, watching a solution, or making a thermometer.

The brain, in either case only partially active, gathers force by slow and steady nourishment. Anything that will retard the processes of education, by prolonging the period of necessary acquirement, will ultimately do good. If once the education of young people in Physics, by experimental and laboratory practice, could be made part of our school arrangements, the hurry and bustle of early mental training would be superseded.

In the older classical training, boys were left to do by themselves a great deal which is now done for them ; and presumably, in the new scientific methods, they will also be left much to themselves. And as formerly we learned, so in the reformed education our sons will learn, by long trial and frequent error, the problem of life,—not how to get a thing done quickly, but how to get it done well.

But meanwhile, what have we to go on with ? Natural Science is not yet even on its trial. All adherents to sound training will be glad to see it take a definite and honoured place in our educational schemes. As it is, owing to various reasons, Science gets scurvy treatment. It is usually the nincompoops in a school that get pitchforked over to Experimental Physics and Chemistry. They cannot acquire languages, or Mathematics, or even Sociology, and are left to dabble out their time in looking at a weary round of elementary experiments, or in lounging at a Chemistry table. It is notorious that the comparison between upper boys in a Public School is always in favour of the classical as against the modern side, even where there is competition in the subjects specially studied on the modern side.

Hence Science as an educator has made her experiments *corporibus vilissimis*; the sounder stuff she has not reached. When that golden day arrives, we may see whether Mr. Spencer is right in prophesying that Science will reign supreme, and her haughty sisters sink into merited neglect, or whether on being tried in the balances she will be found wanting.

But there is another branch of Science of which the materials are cheap, the laboratories inexpensive, and the teachers numerous—that is, Philology.

It is on this point that Mr. Spencer ventures his most astounding opinion,—“Since it will not be contended that in the acquisition of languages, as ordinarily carried on, the natural relations between words and their meanings are habitually traced and their laws explained, it must be admitted that they are commonly learned as fortuitous relations.” An admission that no one will allow for an instant, at a time when a shilling book on Philology has a large circulation, and Grimm's Law is found in every manual of language.

Philology requires as high requirements and as much patience in acquisition as any science commonly studied. The large knowledge of literature necessary in this case is obvious, and its prosecution carries us along—

Quidquid agunt homines—votum, timor, ira, cupido.

To the scientific mind a Greek choral ode is just as beautiful a thing to say the least of it, as a glacier-scratched rock. If the scratches suggest to the geologist the tumbled ruin of an avalanche, the strophe and anti-strophe of the choral ode suggest to the scholar the great many coloured theatre, the solemn choric march, the sway of multitudinous applause.

To those of us to whom men are more interesting than rocks or gases (and there always will be such), the highest scientific culture may be sought in how and why men have spoken, and in what circumstances language was born.

Hence, in any scientific schemes, this science must not be omitted,—nay! for vastness of details, for multiplicity, for interest, what other science can compete with it? To “speech-dividing” men, speech must always be a large thing; and did not an incomplete, purblind, if you will, training in what was said and done in Athens and in Rome produce many of the great scientific men of our time?

Possibly it may turn out, after all, that our forefathers were not so far wrong when they called the man of classical attainment the Scholar, for there is one thing true Mr. Spencer has said in his oft quoted essay,—“The education of most value for guidance must at the same time be the education of most value for discipline.” (p. 42.)

Mr. Spratling was not very much inclined to adopt the lecturer's notion as to the meaning of the term “scholar”; it might possibly apply to residents at universities, but would not include men of business, and men of the world, who might nevertheless possess great literary attainments. He also thought the lecturer's separation of the different departments of study, as conditioning different methods of education, inapplicable to the education of the day, which aimed rather at forming the intellect by many-sided culture, and training the whole man. He quite approved of the introduction of the ancient languages, to a certain extent, into the curriculum, notwithstanding the disproportionate amount of time required for this branch; because he regarded the study of Latin as furnishing a

key to the study of language. But mathematics must have its due place; and so must natural science. In regard to the latter study, it was quite true that there was some danger of listlessness and suspension of active interest on the part of the pupils while experiments were being performed; but he contended that the good teacher would not be embarrassed by this difficulty. The pupils should be taught to some extent to make their own apparatus, and to test in practice—this, in itself, was found to afford a valuable training for the observing powers. And, in particular, the teacher should endeavour to free himself and his pupils from the thralldom of books, and learn to do without them as far as possible. It was found by experience that, when the faculties had been awakened, and the powers of observation sharpened by the study of natural science and kindred subjects, the pupils were not only not incapacitated from taking up the study of language, but rather directly assisted by their previous training in making more rapid progress than would otherwise have been the case.

Mr. Wyand expressed his appreciation of the lecture. He was certainly of opinion that all three branches of instruction which the lecturer had so well described, should be carried on together; and he did not see why a beginning in the proper study of language might be made with the vernacular.

The Chairman thought that the lecturer was entitled to much credit for his boldness in bringing forward what in the present state of education might be deemed heretodox views, however they might have been viewed twenty years ago. There was so much talk at the present day of “practical” education, that it was refreshing to hear a word or two on the other side of the question. It would be a mistake to suppose that the lecturer had advocated a purely classical training; when he had rather, instituting a comparison between three exclusive systems, expressed his preference for the linguistic, or classical, over either of the other two. In regard to the term “useful,” in the title of the lecture, there was no doubt much difference of opinion as to its proper signification; but by the general public it was understood to mean what could immediately be made available for material well-being, in business or otherwise; and it was important to convince parents that, even in this narrow view of the objects of education, popular fallacies prevailed. In the wider sense of the term, and having regard to the mind-training influence of certain branches of instruction, it was a moot point which of them could be applied with the best results; but, granting that they were of equal value, it was clear that the “practical” argument for the exclusion of classical studies from the curriculum was not justified. There was, in his opinion, far too ready an appeal to the senses in the most modern methods of instruction, and what he deemed to be a futile attempt to make things clear which were already well enough understood for all practical purposes. There were certain simple notions which, if not precisely *intuitions* might practically be regarded as such: and it was to little purpose that the attempt was made, in the case of young minds, to prove them to demonstration. The real end of education, however, was the training of the mind, and in this regard no one method could claim a monopoly of utility.—*Educational Times*.

Mr. Fitch's lecture on Teaching.

In continuation of the brief notes on these lectures contained in our previous numbers, we may refer to

some counsels which were given as to the best way of teaching Latin grammar, when the object is not to carry the student to composition or to a full knowledge of Latin literature, but simply to aid in the general understanding of the laws of language, to throw light on the structure of English derivatives, and to enable the scholar to read an easy Latin book. Many teachers produced in the minds of scholars a strong disgust for Latin by overburdening the memory with a good deal of grammar, before grammatical distinctions were seen to serve any useful purpose. But the rule ought to be kept in view, that the use of an inflection or a grammatical distinction should first be seen before the memory is challenged to retain it. It might be doubted whether it was even fair to ask a scholar to learn by heart all the six cases of a Latin noun. It would be some time before he would want the vocative or ablative, or even the genitive; and at first it would be far better to present some little sentences containing a nominative and a verb only, and then a nominative, a verb, and an accusative; point out the meanings of each, cause the words to be learned, and then call attention to the differences in their form. A grammatical distinction means nothing to a child until it is seen in the concrete form of a sentence. The vocabulary of the learner should be enlarged at every step, and new grammatical distinctions should be encountered one by one. All synopses or collective statements of grammatical facts, *e.g.*, the table of cases of nouns, the conjugation of a verb, the list of proposition governing an ablative, have their value, and ought of course to be committed to memory; but this exercise should be reserved to a later period after the use of each fact has been illustrated in detail, and only taught with a view to collect and classify knowledge which had been gradually acquired beforehand. To the last, it would be unnecessary to learn by heart any more than about six of the leading rules of syntax. It was not desirable to treat Latin authors as if they had been written on some graduated scale of difficulty on purpose for school boys; *e.g.*, Eutropius for the lower form, then Cæsar, then Ovid, afterwards Virgil and Horace, Livy and Tacitus. It was far better to take selections, chosen because of their special interest or beauty, or because the teacher himself had lately read some passage which he liked; *e.g.*, even a class of beginners might well relieve the tedium of the *De Bello Gallico* by taking up some short and easy ode of Horace, by examining it in complete detail, hunting out all its allusions, learning it by heart, and perhaps committing to memory also some graceful translation of it by Milton or Cowper. Such a poem once learned will abide in the memory, and serve as a fixed point which may be referred to as illustrative of grammatical forms or poetic images; and, at the same time, as a standard of the way in which another language ought to be studied. This was Jacotot's mode of teaching languages. He was not afraid of departing a little from what seems to be the orderly sequence of difficulty in grammatical science, if by doing so he could kindle the interest of his scholars, or make them see more clearly the use of mere technical grammar and its application to the natural expression of thought. The lecturer strongly recommended teachers of Latin and Greek to read Ascham's Schoolmaster, the account furnished in Mr. Quick's valuable work on Educational Reformers of the methods of Comenius, of Milton, and of Locke; and also the very striking and suggestive chapters on grammatical teaching in Mr. D'Arcy Thompson's "Day Dreams of a Schoolmaster."

In a subsequent lecture, the subjects of Writing and Counting were considered merely as mechanical arts. It was too common a fault among teachers to think a

writing lesson very easy, one in which it would suffice to set a good copy, and set the scholar to imitate it. But mere telling children to write was not teaching to write; and the success of the lesson would always depend on the vigilance and constancy of the supervision. Many children were allowed to go on through a whole page copying their own mistakes and so becoming confirmed in carelessness. But every line should be looked at, and every mistake promptly detected and corrected; either by means of a pencilled model to be traced over, or by calling attention to the true shape and proportion of some particular letter on the black board. Counting and oral computation should be much more often used at every stage of arithmetic. So long as written work alone was relied on, the child would fail to obtain that rapidity and readiness of resource which were so much needed in the business of life. Various forms of exercise were suggested; among others, the plan of taking a certain number—say 60—and making it the subject of a separate oral lesson. By means of quick and pointed questions, the several ways in which 60 was made up,—*e.g.*, 5 by 12, 3 by 20, 4 by 15, 2 by 30, 10 by 6,—might be elicited, and many easy exercises on its aliquot parts, and on the fractional relations of such numbers as 40, 45, 16, &c., to the whole, might be given. Afterwards, the number might be seen in relation to shillings, to pence, to threepenny and fourpenny pieces; also to simple lengths and familiar weights, to hours and minutes; until, in a half hour's lesson, all the properties and uses of the number 60 might be revealed, and other numbers compared with it, so that certain permanent and useful relations between numbers would be thoroughly established in the learner's mind. With regard to the scientific uses of Arithmetic, as introductory to Algebra and Mathematics, it was insisted on that a clear exposition of the meaning and logical basis of each rule ought to precede the working of sums, and to render the learning of a rule by heart altogether unnecessary. This was a department of learning in which nothing should be taken for granted or accepted on authority; but in which the inquisitive—even the sceptical side of a child's mind ought to be fully encouraged to develop itself; *e.g.*, it was always postulated, in working Proportion, that if the second and third terms of a proportion were multiplied together, and the result divided by the first term, the quotient would give a fourth proportional for the required answer. But this ought not to be assumed. It admitted of easy and very interesting demonstration, that whenever there were two equal ratios, the four numbers representing them, when properly arranged, were so related, that the product of two of them must equal the product of the other two; and if this were once clearly seen, and if the numbers in what is called a Rule-of-Three sum were transposed a little by way of experiment, so as to leave not only the fourth term, but sometimes the third, vacant for the required answer; the learner would have a much truer perception of the meaning of proportion and of its right application to the solution of problems, than most teachers took the trouble to impart. The investigation of fractions ought always, however, to precede that of proportion; partly because it became earlier available, being needed in fact to understand the full significance of the remainder in a division sum; but chiefly because it required more mental effort to grasp it, and because it was less capable than fractions of being rendered intelligible by striking and simple appeals to the senses.

In discussing the subject of Geography, special stress was laid on the use which might be made of "Home Geography," of simple ground-plans and rough maps

of the places with which the child was familiar, and of such acquaintance with the cardinal points, with the reasons for the different lengths of the day and night at different seasons of the year; with the manner in which the form of land determines the course and length of rivers; and with such other elementary physical facts as his own observation and thoughtfulness, with a little aid from the teacher, might enable him to discover for himself. It was a great mistake to suppose that costly models, globes, and other apparatus, were absolutely needed in order to make these rudimentary conceptions clear to learners. The most effective illustrations were often those which an ingenious and inventive teacher improvised for himself,—a little model in clay or sand; a plain globe on which he himself drew lines one by one, as he wanted to explain them; or good diagrams drawn *ad hoc*, and in relation to the particular truth then under discussion—rather than those elaborate illustrations which were manufactured for sale, and which often bewildered children by their fulness of detail in relation to matters not yet comprehended. It was a good plan to avail oneself of any historical association which might happen to be connected with the place in which the scholar lived, or with any famous castle, cathedral, or other building which he knew. Much of history might thus be taught *obiter*, and incidentally in connection with geography lessons. Mere knowledge of the names and positions of places, unless some interesting or useful associations were established with such names, was the most barren of all school acquisitions, and that which soonest dropped out of the mind. Among many directions given in relation to the teaching of History, it was specially insisted on that the subject should be so taught as to inculcate caution, fairness of mind, a sense of the great difficulty of obtaining perfect accuracy in the statement of facts, and consequently of the need of much suspension of judgment and generous consideration in estimating the characters of those who had played a great part in history. The fact that the whole of the data on which we can form a safe judgment on the character of a man or of an event are not always before us, should be frequently called to mind; and this practice would not be without a reflex effect of great value on the moral habits of a pupil; and especially on the manner in which he would come to conclusions about the conduct and character of his own contemporaries. Some directions were given as to the order in which historical facts should be studied; and the way in which lessons on the administration of justice, on the constitution of Parliament, on taxes and local government, should be interspersed with the more regular teaching of the subject.

In the concluding lecture, the subjects of Physical Science, information about the common objects and phenomena of nature, were discussed. The special objects of Physical and Experimental Science, and the claims which have been recently urged by Sir J. Lubbock and others, for a fuller recognition of these branches of knowledge as constituent parts of a liberal education, were examined at length. Those claims were justified by obvious practical utility of all researches into the beauty and marvellousness of the disclosures which science makes to us, and the delight with which a child feels wonder and curiosity stirred within him by the wise exposition of natural laws. And if the habit of observation and generalisation were duly encouraged in connection with the study of science, the indirect mental effect of such a habit would be found of great value in solving many of the practical problems of life which were not scientific. Mere information about common

objects, about the size of the sun and moon, or the structure of the mechanical powers, or the way in which water boils, is not science, and does not deserve the name. There is no true scientific teaching unless single facts are properly correlated with other facts, and seen as illustrations of some larger general truth, than is expressed in the statement of the fact itself. Training of this kind was not to be had from books only; though we might well congratulate ourselves that, in this department, the highest authorities, Huxley, Lockyer, Balfour Stewart, and others, had come to the aid of the schoolmaster. Nor was it to be gained from oral lessons only, valuable and indeed indispensable as these were. The pupil must himself be brought into actual contact with the facts of life, with the material forces around him, and learn their nature by handling and by regulated experiment. Some remarks on the way in which this might be most effectually done, and on the place which scientific teaching ought to hold in a well organised school course, brought this second series of lectures to a conclusion.—*Educational Times*.

Natural History in Schools.

By JOHN R. PAGE, M. D.

Read before the Educational Association of Virginia, at Hampton, July 11th, 1878.

At the request of my colleague, the retiring President of the Association, I have undertaken to report "On Text Books and Methods of Instruction in Natural History." But inasmuch as the subject has not been discussed in this State, and the importance of stimulating such studies is very great, I trust you will pardon me for not confining myself strictly to the verbal contract, but permit me to make a review at such length as to give some information in regard to what has been written and done on the subject. In seeking to add to the efficiency of any established system, especially that of education, we are apt to regard any suggestion for improvement as something *new*; whereas, if we look back to ascertain what have been the sentiments and opinions of the great forerunners and pioneers of thought, we will generally find that we have been forestalled in many of the things we consider to be novel elements.

It is to the writings of Lord Bacon, perhaps, that we are first indebted for the idea of incorporating on the system of scholastic instruction the study of Natural History. Lord Bacon, while urging the study of the classics as necessary, and requisite for all future attainments, saw the necessity of withdrawing the youthful mind from the too exclusive pursuit of classical and mathematical knowledge. He had doubtless felt this need in his own experience, and his love of nature prompted the suggestion of incorporating into a system of classical education a certain proportion of *natural objects* as subjects of contemplation, in order to break up a mental train, the tendency of which was to lead the mind into classical routine, which, like all other routine, sooner or later degenerates into pedantry, bigotry and ignorance of a great deal worth knowing. That this need was felt by other minds than that of Lord Bacon, may be found in the accounts given of John Amos Comenius and Wolfgang Ratich, in the XVIIth and XVIIIth centuries, as well as in the writings of Rousseau and others in France, and what at a later period has been attributed to Pestalozzi.

Comenius was a Mpravian, and his ideas on impor-

tance "*object teaching*" were accepted by the most advanced thinkers of the age in which he lived, notably, in many respects, by John Milton, and Oxenstein, of Sweden. Comenius conceived the idea that teachers should follow nature, instead of forcing it against its bent; should take full advantage of the innate desire for activity and growth; that languages should be taught as the mother-tongue is taught, by conversations on ordinary topics; that pictures and object lessons should be freely used; and that teaching should go hand in hand with a happy life. He included in his course the teaching of the mother tongue, singing, physical geography, and a knowledge of the handicrafts. But the principle upon which he most insisted was, "*that the teaching of words and things must go hand in hand.*" He was, also, one of the first advocates of the teaching of science in the higher schools.

The writings and teachings of Rousseau, about the same time, found practical-expression in the celebrated Philanthropic of Dessau, a school founded by John Bernhard Basedow, a friend of Goethe, in which the principles of teaching was very much those of Comenius—the combination of words and things. Basedow published a book about 1730, entitled, "An Elementary Book of Human Knowledge," in four volumes, with a hundred plates; and its plan comprised: 1st, Elementary instruction in words and things; 2d, A method of teaching children to read without weariness or loss of time, [a phonic method]; 3d, Natural knowledge; 4th, The knowledge of morals—the mind and reasoning; 5th, Natural religion; 6th, A knowledge of social duties, commerce, &c.

Basedow is said to have been a man of coarse manners, of little culture, of violent temper, and in the latter years of his life, grossly intemperate. But some of his assistants, among whom were Wolke, Coupe and Solzman, taught very successfully on his system, and the school at Schrepenthal, founded by Solzman in 1784, is, I believe, still in existence.

Notwithstanding these facts, Pestalozzi, who was born at Zurich in 1746, is regarded by the advocates of object teaching as the originator of the system. Pestalozzi, though a human and generous man, is said to have had little originality, a meagre and desultory education, and no tact. He set an example, however, of great self-abnegation, devoting his time entirely to the education of the children under his charge by living sleeping playing and lating with them in order to gain their entire confidence and affection.

His method was, to proceed from the simplest to the more difficult subjects; to begin with observation; to pass from observation to consciousness; from consciousness, to speech; then to measuring, drawing, writing, and so on, to reckoning. He illustrated the truth of the principles of Comenius and of Rousseau, by the union of training with information in a natural way. The system of Pestalozzi has undoubtedly made a very decided impression on all branches of education since his time.

Froebel, the founder of the Kindergarten, teaches young children upon the same principles—simply by playing with them and amusing them with objects of instruction.

Various objections have been urged against the system of Pestalozzi; some of the most important, alleged as practical defects, were: (1), that the intellect was quickened, but very little positive knowledge imparted, while the child almost inevitably gained the impression that he had made wonderful attainments; (2), that too high a place was given to languages; (3), that the mathematical and intuitive studies were given

more than their proper share of attention, while other equally important studies were neglected; (4), that the process of simplification was carried too far, and continued too long; (5), that repetitions were continued until they became wearisome; (6), that historic truth and testimony, as a source of knowledge, received too little attention, especially in religious matters; and (7), that religious knowledge was regarded rather as innate than revealed. But, as I have said, his system, notwithstanding the opposition and objections against it, has had a marked influence on the system of instruction since his day. Several assistants, and quite a number of pupils of Pestalozzi, established schools subsequently, and improved upon his system. The most distinguished were Neidener, Schmid, Krusi, Zeller and Fellenberg, whose influence recommended the system so highly that in the early part of the present century it was adopted extensively in Prussia and the smaller German States, as well as in France, Great Britain and the United States.

As early as 1818 Doctor Mayo, of London, visited Pestalozzi's institute at Yverdun, and was so favorably impressed with the system of instruction that he determined to introduce it into Great Britain. With the aid of several others "*The Home and Colonial School Society*" was founded in 1836, for the promotion of schools conducted on this system, and a few years later "*Model and Training Schools*" were established, from which about three thousand teachers, a majority of them females, have been sent out. Doctor Mayo and his daughter, Elizabeth Mayo, prepared books of instruction for the teachers of "*The Home and Colonial Training Schools*," detailing with great minuteness the process of instruction in all branches taught on the Pestalozzian system.

"A manual of Elementary Instruction" in two volumes was published by Miss Mayo as late as 1861.

Previous to this time it had been introduced into the "*Normal and Model Schools*" at Toronto, Canada, and attention had been called to the system by the publication of Henry Bernard in his "*American Journal of Education*" of "A Sketch of the Home and Colonial Schools Society's Operations," with examples of their mode of teaching. Several eminent teachers and friends of education visited Toronto about this time [1860] and spent some time at the "*Model Schools*," witnessing the exercises of the primary classes trained under this system. The most prominent were A. E. Sheldon, superintendent of city schools at Oswego, New York, and N. A. Calkins, of New York city. Prof. Sheldon procured a volume of instruction on the methods of object teaching, and also obtained from the "*Home and Colonial Society*" the service of a teacher, Miss M. E. M. Jones, an experienced instructress. Professor Calkins, having also devoted great attention to the methods of the society, gave instruction in object teaching of the Teacher's Institute in New York city, and elsewhere.

Since that time, the system of object teaching has been introduced into the model schools of New York, New Jersey, Michigan, and a portion of the primary schools of Syracuse, New York, Paterson, New Jersey, Chicago, Illinois, Toledo and Cincinnati, Ohio, and other cities in our country. Sheldon and Calkins have both published treatises on the subject; as well as Barnard of Hartford, Willson of New York, Welch of Michigan, and others of more recent date. I can only take the book of Sheldon, as it is condensed from the "*Manual of the Home and Training Schools*," with the assistance of the former teachers of those schools [Miss Jones and Professor Krusi, a son of Pestalozzi's associate] which invests the book with a degree of authority

which does not appertain to the other treatise. The practice of instruction as given in all of these treatises, is with children from four and five to twelve and fourteen years of age.

The lessons are taught by means of Objects, showing color, form, number, size, weight, sound, language, reading, dictation, geography; lessons on the human body; lessons on animals; lessons on plants; moral instruction and drawing. Under form, is included the elementary principles of geometry, and writing. Under number, the simpler rules of arithmetic. Under language, the principles of grammar; and under lessons on the human body, animals and plants, elementary physiology, zoology and botany. This comprises a sufficiently extensive range to embrace all the branches of study necessary for public schools generally.

The rules of the system require, that the teacher shall give full explanations in regard to the matter which is the subject of the lesson; that the properties, nature, qualities and uses of the object, shall be brought out by the examination; the terms given and explained, and ideas developed, and the whole impressed upon the memory by numerous repetitions, and by writing, and drawing upon the blackboard. The system requires numerous variations of detail, which must be left to the skill and tact of the teacher; but the general order indicated above, must be followed. With the youngest children [say four years of age] the object of the teacher must be to exercise the perceptive faculties. With the next oldest [five years] a more minute perception is developed, and the conceptive faculties. With the third class [twelve years of age] the reasoning faculties are exercised, especially in the matter of distinctions, differences and comparisons, while the perceptive faculty is still kept in activity. In a fourth class [fourteen to sixteen years of age] the imagination and the powers of analogy, and generalization are developed.

Such is a brief account of the system of object teaching, which in reality forms the basis of the teaching of the sciences in schools.

Many prominent teachers in Europe, as well as in this country, have extolled the system, and have adopted it, in order to break up the routine which had deprived the best plans in use of much of their vitality. A teacher of great experience, writing, some fifteen years ago, on the great schools of England, and the importance of introducing science studies, said: "Science as a branch of education, cherishes the instinct and promotes the habit of observation. Interest a boy in astronomy, in geology, in chemistry, in zoology, in botany, and he yearns not only for astronomical, geological, chemical and natural history books, but finds a freshness in books of every kind, through the freshness of his own perceptions."

This has been the key note of the "Reports of Her Majesty's Royal Commission on Scientific Instruction and the Advancement of Science," from the first to their sixth report.

After the first of these reports, the head masters of the schools of England, realised, and recognised in the main, the fact that science teaching must come, and that it would be better for them to shape the system to be adopted leisurely and in concert, than to wait until it was forced upon them.

The Royal Commission, to which I allude, was composed of the most enlightened and trusty of the nobility and scientific men of England, such as the Duke of Devonshire, the Marquis of Landsdowne, Sir John Lubbock, Kay Shuttleworth, Mr. Samuelson, Sharpey, Huxley, and H. J. S. Smith, named to be commissioners, to make inquiry with regard to scientific instruction, and the advancement of science, in the several universities in

Great Britain and Ireland, and the colleges thereof. Information was also sought from the head masters of 202 schools, which appear in the report of the "Schools Inquiry Commission." These reports are so full of information on the subject, that I shall make free use of them.

In the sixth report, paragraph 7 of preliminary remarks, it is written: "*that languages and mathematics are by universal consent regarded as indispensable parts of a system of education, but any system from which science is excluded must in our opinion be incomplete and unsatisfactory.*"

Again, in paragraph 8, they say: "We feel it the more incumbent upon us to insist on the introduction of scientific training, as an integral part, of school instruction, because in our third report we have recommended, that students at the universities, should at an early period, if not from the commencement of their academic course, be left free to choose for themselves, among the principal lines of study, and should not be hampered by being compelled to pass examinations in subjects having no direct bearing on their subsequent career."

From the first report to the last, it has been urged, that the incorporation of science studies into the regular system of instruction, "would tend to cherish the instinct and promote observation, enliven the mind, and give it force and direction in its general action, besides its tendency to disrobe industrialism of its repulsive features."

The opinions in favor of the teaching of science in the public and endowed schools by the Royal Commission, making the sixth report may be summarized as follows: "Of the large number of men, who have little aptitude for science,—especially for science which deals not with abstractions, but with external and sensible objects,—how many such there are, can never be known as long as the only education given at schools is purely literary; but that such cases are not rare, or exceptional cannot be doubted by any one, who has observed either boys or men. We believe, that many pass through life, without useful employment, and without the wholesome interest of a favorite study, for want of an introduction to one, for which they are really fit."

Sir Charles Lyell has remarked on the advantage which men of literature in Germany enjoy over men of other countries, in the general acquaintance the former possess with what is passing in the scientific world; an advantage due to the fact, that natural science to a greater or less extent is taught in all the German schools. "It quickens and cultivates directly the faculty of observation, which, in very many persons lies almost dormant through life, the power of accurate and rapid generalization, and the mental habit of method and arrangement; it accustoms young persons to trace the sequence of cause and effect; it familiarizes them with a kind of reasoning which interests them, and which they can promptly comprehend; and it is perhaps the best corrective for that indolence of memory—merely mechanical." They go on to say: "With sincere respect for the eminent schoolmasters, who differ from us in this matter, we are convinced that the introduction of the elements of natural science, into the regular course of study, is desirable, and we see no reason why it is not practicable."

In the report of the "Schools Inquiry Commission," it is stated, "We think it established that the study of Natural Science develops better than any other studies the observing faculties; disciplines the intellect, by teaching induction as well as deduction; supplies a useful balance to the studies of language and mathematics,

and provides much instruction of great value for the occupations of after life."

Mr. Wilson, one of the assistant head masters at Rugby School, strongly supports this view in this evidence, and proposes that the elements of certain branches of science, to which he gives the general name of "*Natural History*," should be taught to young boys as part of what he aptly terms "*the common ground for all*," and he has so well described the nature of this common ground, that I quote the main parts of his sketch: "An orrery and globe and a little astronomy form the natural beginning. Let the boys make the effort involved in realizing the plan of our solar system; and our earth in space, with its atmosphere mantling round it; its kinship to the planets; its relations to the sun and moon. These and some of the common phenomena—day and night, summer and winter, eclipses and changes of the moon—form the natural and old well-established introduction to science. They are still objects of surpassing interest to every successive generation. *They take boys on all their sides—memory, imagination and reason.* They show, as nothing else shows, the connexion of cause and consequence. And there is a deep satisfaction, a real pleasure of the intellect, which boys attain when they first understand the causes of these common great phenomena. They stand thenceforward on a higher platform. The universe presents to them not a mere wonderland, but a reign of law. These are the '*litteræ divinæ*' written on the universe by the hand of God." Then we pass on to the earth itself, and all its activities; the effects of its still remaining internal heat; its volcanoes and earthquakes; the slow oscillations of level, and the great changes slowly taking place in the familiar outlines of the continents and islands, and the proofs still visible of past changes.

These things must be well thought out by the class, and illustrated and brought home to them *by pictures and specimens.* We come next to the more complicated consequences of solar heat and light, which have to be explained and illustrated. It is with peculiar pleasure that a boy learns the causes of winds and currents, of trade winds and cyclones, of evaporation and rain, and its distribution on the earth. There is a sense of power obtained by finding out that these great and familiar phenomena are subject to laws, and are not primary facts. "All these are matters," he says, "towards which it is only necessary to guide the thoughts of the boys and they can, with very little help, think them out for themselves." He rarely finds it necessary to give any regular explanation of anything except as a kind of *resume* of the suggestions thrown out by the class, and successively criticised. Fresh information as to facts must of course be given when it is seen to be wanted, and not before. And this incidentally gives them a much higher respect for knowledge and the value of facts than they had before.

The consequences of these activities must then be traced out; and these constitute the principles of geology. To teach them is not hard—a good supply of *pictures, photographs and drawings*, will be found very useful. The work of frost and snow, the glacier and iceberg, the geographical distribution of plants and animals, and many other principles of geology are intelligible, and all, if I may so call it, are *exciting*—they excite the mind to further reading and a good deal of thought; they show, moreover, the regions of knowledge, the necessity of chemistry and meteorology and astronomy and zoology are felt, without being stated in so many words. Mr. Wilson then goes on to say that, "It may seem to some that the amount of positive knowledge gained is too little, and indeed it is not much, not so much as would be gained by half the time spent in learning and being

examined on somebody's advanced text-book. But from the one system the boy emerges hungry for more knowledge, and his own reading will supply his wants; he emerges with a clear understanding how science grows, and what it is, and as a frame-work in which he can fit all knowledge he subsequently acquires; which from the other he comes out with a vast deal of information, but with very little knowledge of permanent value. These subjects," he continues, to say, "give a solid foundation, of familiar facts, which form the basis of subsequent scientific knowledge, and they attract the strongest and finest minds, which is not found to be the case with all branches of science."

Again: "It may be urged that this teaching cannot be thorough; that boys will be brought in contact with studies at an age when they cannot understand them. This is, of course, partly true; but it is no objection. The logical order of ideas is not the educational order. A boy learns grammar, which might be said to precede logically; he reasons before he can learn logic, and so he has learned a thousand things by experience and observation, and reading and conversation, which form the material out of which science grows. The teaching is thorough, *so far as it goes*, and it is delusive to suppose that the teaching of mechanics or physics can be made exhaustively thorough to a boy. He apprehends only by comparison of one thing with another; and when experiment takes him out of the range of his experience there his conclusions are not his own but his teacher's. These subjects, which may be put aside as mere scientific information, have a double value, *stimulative and intellectual*, that no one who has not tried them can well estimate. They would plainly be incomplete by themselves; they do not admit—taught in this manner—of the careful study of detail, the minute and pains-taking work and drudgery that makes every science so valuable as an instrument of education—to form a common ground between them—to be science to the man of literature, and literature to the man of science." The foregoing views of Mr. Wilson have impressed me so forcibly, and have been expressed so pointedly, that I make no apology for quoting at such length from his testimony before the *commission*. Canon Cromwell, Principal of St. Mark's College Chelsea, expresses very much the same ideas as those of Mr. Wilson, when he "insists on the importance of introducing the elements of physical geography and other parts of natural science into the primary schools." He says, "Understanding by primary schools those in which boys are generally under thirteen years of age and over seven, I know by experience that the elements of physical geography can be very well taught, almost throughout the school. The first step in geography should be made in physical geography, and one advantage possessed by this subject, from an educational point of view, is this, that almost everything in it can be presented to a child in a concrete form. He may learn something about the principles of heat, about air and water, about natural history and the action of the elements upon the surface of the globe. He can have illustrations of many of these things pointed out to him in his own neighborhood, wherever he is. It seems to me it is the best introduction to any knowledge of physics that might be hereafter required. Wherever the teacher had a special bent for chemistry he might illustrate what he had to say about the laws of physical geography by his knowledge of chemistry. If again, he were a man who took great interest in natural history, (*i. e.* zoology and botany), he would dwell more upon these portions of the subject. Physical geography connects itself with almost the whole circle of what are called physical sciences. I know that

children take great interest in the subject, and what they take great interest in they learn quickly."

The evidence laid before the "Public Schools Commission," by Dr. Carpenter, Sir Michael Faraday and Dr. Hooker, is so entirely in harmony with these views, that I am constrained to quote them in part.

Dr. Carpenter in response to the question, "Do you think that the mind, ordinarily speaking, is as apt for the exercise of its faculties, upon the subjects of natural science, as upon grammar, and mathematical studies, at the early period of life?" answered: "I should say more so; that it is more easy to fix a child's attention upon something which it sees, than upon an abstraction." Again: "Do you think in that point of view, in fact, it is so far a subject better calculated to call out a healthy action of the reasoning powers, than the more abstract subject of grammar and mathematics?" Answer: "I think it is at the early period. I think that a lad from ten to twelve years old, is better fitted to be led to observe and reason upon what he observes in objective phenomena, than he is to reason upon abstractions. I think that from say twelve years of age, the powers may be healthfully exercised upon abstractions. But, as far I can judge, a child in learning a language learns by rote purely, or almost purely, up to say twelve years of age, but after that, he begins, if he is well taught, to understand the *rationale*, so to speak, of the rules. But it is a mere matter of memory with him up to that time."

Sir Michael Faraday in answer to the question, whether he would introduce science studies at an early age, concurrently with classical instruction? answered: "All I can say is this, that at my juvenile lectures, at Christmas times, I have never found a child too young to understand intelligently, what I told him; they come to me afterwards with questions which proved their capability."

In answer to the question, "You would not be frightened by the hard words?" he said: "I do object, very much, to the too frequent use of hard words, or technical phrases, either in chemistry or on other subjects. The hard words are not the things. But the result will depend more on the men, who are the teachers, than on the wording itself. Education should not be stopped by that."

The same commission received from Dr. Hooker, an interesting account of the successful attempt made by Dr. Heaslow, to introduce the study of botany into a village school. Professor Heaslow thought "it was the most important agent that could be employed, for cultivating their faculties of observation, and for strengthening their reasoning powers. That it was the opinion of the inspectors of the schools," that the children were in general more intelligent than those of other parishes, and they attributed the difference to their observant and reasoning faculties being thus developed.

The Commission, after hearing the evidence of the very distinguished and learned gentlemen, whose name I have mentioned, and that of a number of others, of great experience on the subject, say: "This evidence leaves no doubt upon our minds, that elementary scientific instruction might be given with great advantage from the commencement of the school career."

The chief grounds of excuse given, for the omission of science teaching, before the Commission, were: (1.) The absence of funds. (2.) The uncertainty of the educational value of science teaching, particularly in the case of young pupils. (3.) The difficulty of finding time for a new study in an early overcrowded curriculum.

The absence of funds was admitted as placing very

serious difficulties in the way of some of the smaller foundations; but it was also shown, that satisfactory results, in science teaching, may be produced at very small expense. The greater difficulty was, in providing for schools with slender incomes assistant masters who have both adequate literary and scientific knowledge, and the requisite skill in class teaching and practical instruction. Even for the great public schools, it was shown that much difficulty was experienced in obtaining the service of science masters, fitted to form part of their staff. The head masters naturally looked to the universities to supply them with assistant masters, but the number of university students of science [1876] was so limited that the supply fell short of the demand.

In regard to the uncertainty as to "the educational value of science as an objection," they referred to the evidence already given, and contended that its force was not diminished by the fact that much of it relates to primary schools.

The third difficulty—the want of time—was admitted as a real difficulty, but was thought to offer no justification whatever for the total or almost absolute exclusion from education of any great branch of human knowledge. They contended that the difficulty was one that might be met by carefully economising time, by employing the best methods of teaching and by discarding superfluous subjects of study. Nor did it appear to them impossible to make a fair adjustment between the claims of these different branches of instruction. Putting the number of hours of study in the public schools at not less than thirty-five [35] per week, including in the estimate the number of hours on an average employed in preparation, they concluded that six hours could be given to science, six hours to mathematics, and that twenty three hours per week would remain for the study of languages and other subjects.

To express their convictions even more fully, the members of the Royal Commission on Scientific Instruction terminate the sixth report with the following recommendations:

1. That in all public and endowed schools a substantial portion of the time allotted to study should throughout the school course [subject to certain exceptional options], be devoted to natural science; and we are of opinion that not less than six hours a week on an average should be appropriated for the purpose.
2. That in all general school examinations not less than one-sixth of the marks be allotted to natural science.
3. That in any leaving examination the same proportion should be maintained.

The review which I have so imperfectly given of the history of *object teaching*, and the copious extracts I have taken from the "Reports of the Royal Commission on Scientific Instruction and the Advancement of Science," in England, furnishes sufficient evidence to justify me in letting the subject rest here, without producing any additional testimony from the systems of scientific instruction in the schools on the continent of Europe.

As to the adoption of science studies in our public school system of instruction, there may be a difference of opinion, as to the form most applicable to all schools, but the importance of its adoption, *in some form*, I think cannot be gainsaid.

In my humble opinion, *the system* that would prove most applicable to all schools, is that which I have quoted at considerable length given in the evidence of Assistant Head-Master Wilson, of Rugby School in England. And *the form* I would recommend as most applicable is that marked out by Canon Cromwell,

Principal of St. Mark's College, Chelsea, already quoted, who presents the matter most forcibly when he says, "the first steps in science should be in *Physical Geography*, because it connects itself with almost the whole circle of what are called the physical sciences."

With the many admirable text-books on the subject now illustrated by means of an orrery and globe, wall-maps and drawings on the blackboard, the subject matter may be easily explained and presented to the mind of the child in the most concrete form. Along with this course, something may be taught about the principles of heat, about air and water, with very simple contrivances; about Natural History, by familiar objects near at hand or easily attainable; by observation of the action of the elements upon the surface of the earth, in his own neighborhood almost every where he is. This instruction should be made equally applicable, in my opinion, to girls and boys, as a foundation for the farther study of *science* subjects; when the attention of the minds of the girls should be more particularly occupied with Botany and Chemistry, while boys should be engaged more especially with elementary physics, mechanics, mineralogy and geology and chemistry, with a sufficient insight into zoology and botany as to develop a taste to induce them to prosecute these studies by observation in their rambles and outdoor pursuits. The study of Botany and of Chemistry should constitute an important part of the course of instruction in all female schools. A distinguished reviewer writing not long since on the subject of the attainments of the late John Stuart Mill as a Botanist, said that he doubted whether a man could be a thorough logician without being a thorough Botanist; such was his estimate of the study of Botany as a trainer of the mind.

The fact is, the elementary principles of nearly all the branches of physical science can be taught by a competent teacher with very simple contrivances to show common experiments easily comprehended by boys and girls.

But wherever it can be done certain apparatus ought to be obtained in order to familiarize pupils with some of the instruments necessary for scientific work.

A knowledge of science cannot fail to be useful to boys and girls, whether in town or country—science on the farm, in the household, in the workshop, in the mill, in the mine and in all the avocations of life. The absence of such instruction in the South has been its bane, and has tended to lessen the usefulness of a great many, whose minds would have been fitted to turn such knowledge to practical account. It was for the want of this knowledge and of an appreciation of geological studies that the geological survey of the State by Professor William B. Rogers thirty years ago, was arrested after being prosecuted for three years or more. The completion and publication of the results of that survey, would have added millions to the values of Virginia. While *her* minerals and metals have been left to slumber in their native beds, those of Pennsylvania, New Jersey and New York have been mined, and have given prosperity to their people.

In regard to the apprehension that exists in the minds of some persons, that the introduction of scientific studies into our school system might tend to create in the minds of the youth a disposition to skepticism and unbelief in the *Truth of Revelation*, I will say that I have no such fear. The blessed truth of revelation can take care of itself, and the day is even now at hand when skepticism cowers under the strong arm of true scientific induction. In the words of a great naturalist, "The truths of religion and science properly interpreted

can never be at variance, because all true scientific induction in regard to natural phenomena, begins and ends in the conception of order, arrangement and uniformity, which however inadequately comprehended by science, is the evidence of *Supreme Mind*, and the manifestation of its universality and eternity." Far be it from me to advocate science studies on merely utilitarian grounds. Nothing can be more elevating to a true man. In my estimation the phenomena of nature acquire new force when we consider the faculties of man as not limited in their exercise to his present sphere of activity. The *great unity* made manifest in all the diversity of nature appeals to the *imagination* by its grandeur, and to the *reason* by the severe principles of science, on which it rests; and the mind is made to feel as if a revelation had been vouchsafed to it of the past and future history of the universe.

In the words of another, "If the pride of man is ever to be mocked, or his vanity mortified, or his selfishness rebuked, it is under the influence of these studies that he will learn *humility* and *meekness*, and *charity* and *faith*."

In regard to text books, those used by my classes are the Manual of Zoology, and the Manual of Palæontology, by Nicholson; Gray's Works on Botany. In the classes of Mineralogy an Geology, my colleague, Prof. Smith, uses Dana, Lyell, and Le Conte. Works of a more elementary character may be more applicable for the schools. Quite a number of elementary works have been published in the last year or two—such as those of Principal Dawson of Canada, Tenney, Morse and others, of the United States. The little works of J. Dorman Steele, called *Fourteen Weeks in Popular Geology*, and in *Zoology*, seem to have given satisfaction to the teachers who have used them. The teacher should examine carefully the books he uses in comparison with the best authorities, so as to supplement and correct, in his explanations and lectures, any errors that may be found. A good syllabus of the lecture, on the blackboard by the professor, who has thoroughly prepared himself, serves as the best means of penetrating imperious minds and for making the student think over the subject, but a good text book is also very necessary when obtainable.—*Educational Journal of Virginia*.

Latin Element in the English Language.

THOS. J. CHAPMAN, A. M.

The English language is largely made up from the Latin. About three-tenths of the words in our vocabulary are from that source. This strong infusion of Latin may be attributed to several different agencies working at various times. The first of these was the subjugation of Britain, beginning with the invasion of Julius Cæsar. During the three years, commencing with the year 58 B. C., he had carried on his brilliant campaigns in Gaul, and had reduced that vast country to subjection to Rome. By the year 55 B. C., he had brought up his victories to the Atlantic coast, and there learned that there were other worlds to conquer in the islands of the sea. The first authentic account that we have of Britain is in the Commentaries of Cæsar, though it existed in most men's mind, as a dim, misty, mythical region—the *ultima Thule*, the end of the world. Pytheas, a Greek writer and geographer 400 years before Christ, claims to have visited Britain, and says of it: "I have traversed Britain wherever it is accessible. It is neither land nor sea nor air separately, but a

certain concretion of them all, like sea blubber, in which the land and sea and all things are suspended. It is, as it were, the boundary of all things, being neither passable by traveling nor by sailing. I have myself seen the resemblance of this blubber, and have described the rest by hearsay." Better notions of the islands prevailed at the time of Cæsar, yet very little was actually known about it to the Romans.

In the latter part of August, 55 B. C., Cæsar sailed from near what is now Calais, in France, with two legions, or 10,000 troops, eighty transport vessels, and a number of ships of war, and landed on what he calls "aperto ac plano littore"—an open and level shore, believed to be an open beach near the town of Deal, in the county of Kent. The natives gallantly resisted his landing, but after a stubborn contest, the Romans made good their footing, and the barbarians were driven away. Owing to the lateness of the season, however, he did not at that time push the invasion of the island, and after a stay of three weeks he returned to the continent. In the May following, he sailed again for the island with an army of 25,000 infantry and 2,000 cavalry, in a fleet of more than 800 vessels, and landed at the same place as the year before. His landing was unopposed; the inhabitants, alarmed by the greatness of his fleet, had abandoned the coast and retired to the higher grounds. Cæsar penetrated the country to the distance of some twelve miles, and came upon the enemy in a place which, he says, was well fortified by nature and art. They immediately came to blows; and this was the first of a long series of skirmishes and battles, in which the Romans had almost and uniformly the advantage.

But the Britons were a brave enemy, and at the end of four months, Cæsar had been able to accomplish but comparatively little. He had succeeded in carrying his work as far as to the territories of Cassivellaunus, on the river Thames, about eighty miles from the point where he had landed. He had found a people savage it is true, but by no means a race of savages; they possessed and enjoyed many of the arts and advantages of civilized life. They fought the legions of Cæsar with weapons of iron and brass, and with chariots armed with iron teeth; they dwelt in houses, of which, we are informed, they had an immense number; they coined money of metal; they had flocks and herds in abundance; they had a system of religion, of which the Druids were the priests. Though Cæsar did not conquer any great portion of the country, he was the first to extend the Roman arms in that direction, and levied an annual tribute upon the island.

Nearly one hundred years later, Ostorius, under Claudius, invaded the country, and after a long struggle, defeated the celebrated Caractacus, king of the Silures, in Britain, and led him prisoner to Rome. Some years still later, about A. D. 75, Agricola, under Vespasian, was appointed governor of Britain. He pursued towards the country a wise and generous policy; and carried his attempts at subjugating the island as far north as the Frith of Tay, and erected a chain of fortresses from the Clyde to the Frith of Forth. About A. D. 200, the Emperor Severus passed over into Britain, determined to secure the Roman province against irruptions from the Caledonians and other barbarous tribes who dwelt among the Grampian hills. The Emperor Hadrian, nearly one hundred years before, had built a wall from the mouth of the Tyne to Solway Frith, for the same purpose. Severus found this a work of great difficulty and labor, as it was necessary to cut down forests, level mountains, build bridges, and construct roads through fens and marshes. In the midst of his plans and labors he was overtaken

by illness, and died at York, A. D. 211. Rome continued her hold upon Britain until the year 426, when the last of the legions were withdrawn by Valentinian to fight against the Huns, who were sweeping down upon the empire. The legions of Rome never returned to Britain.

It is not thought that this long tenure of the island by the Romans left any very marked impression upon the language of the people. It was a mere military occupation; and when they left the island, almost every trace of their presence was soon effaced. Agricola, it is true, had prevailed upon the higher classes of the people to assume the Roman habit in dress, and to have their children taught the Latin language; but the great mass of the people had affiliated but little with the Romans, and their speech was perhaps never very largely affected by them. Whatever impress may have been made upon the language, was soon almost entirely swept away in the cataclysm that followed. A few words in *caster* or *chester*, from the Latin *castra*, "a camp," as Doncaster, Manchester, etc., are relics of that early Roman occupation, handed down to fifty generations.

The early Britons, as we have seen, were originally a brave and warlike people. They gallantly met the legions of Cæsar, and bravely contested the ground foot by foot with his successors; but by the long domination of their foreign masters they had become thoroughly enervated and helpless; so that when the Romans withdrew their protection they were left to the mercy of their rude neighbors of the north. These are known in the history as the Scots and Picts. Who they were is not exactly known. The most probable opinion is that they were two tribes of the native Britons who at different times had fled from the dominion of the Romans, "choosing," as an historian remarks, "liberty and barren mountains rather than fertile plains and slavery." No sooner had the Romans withdrawn from the island than these tribes, breaking through the defenses that had been erected by Agricola and Severus, poured into the peaceful valleys and villages of the south, carrying fire, and sword, and terror wherever they went. Against these invaders the unhappy Britons invited over the Angles and Saxons, a warlike people inhabiting the north-western parts of the continent. They came; but under their leaders, the famous Hengist and Horsa, like the hawk in the old fable, that was invited by the frightened doves to protect them from the kite, they turned in and devoured more of them in one day than their former enemy had done in a long time. The Anglo-Saxons took almost entire possession of the island, and long ruled it as with a rod of iron. "They rather exterminated," says Russell, "than subdued the people." Their tenure differed from that of the Romans in this important respect, that it was not a mere military occupation. They came as colonists; they came to stay; and they crowded on the original inhabitants, and supplanted their speech by a process analogous, as Prof. Hart points out, to that by which the original inhabitants and language of America have been compelled to give way to another race and a different speech. In the present English language are to be found scarcely any more traces of this early language of Britain, than are to be found traces of the Indian languages in the English spoken in America to-day.

The next point of contact of Rome with Britain was of a more peaceful character. It was on the side of religion. The Britons, at a very early period in our era had been converted to Christianity; whether by St. Paul, Joseph of Arimathea, or by other early missionaries, is a disputed point. But the Saxons, who had

invaded and taken charge of the islands, were pagans ; and in the year 596 Pope Gæ Gregory sent Augustine to preach the Gospel to them. " Augustine the monk," says an old historian, " was a tall, slender, lean man in person ; as to his faculties, he was like one of the Pharisees mentioned in the Scriptures, and had a haughty and arrogant appearance." He seems, at all events, to have been a man of great energy of character, and of devotion to his work, and the result of his labors was the speedy and thorough conversion of Britain to the religion of Rome. Augustine was made archbishop of Britain, and Italian monks and priests monopolized the Church. Thus Britain came again under Roman influence, and the sturdy Anglo-Saxon speech of the people became impregnated with words from the Latin ; chiefly, however, terms relating to religion and ecclesiastical affairs.

The Anglo-Saxon rule continued for some six hundred years. For many years [towards the close of their long domination, they had almost constant troubles with the Danes, another tribe of Northmen, who made frequent descents upon the island, and who, finally, under Canute, in 1017, obtained the ascendancy in Britain. The government was held with varying fortunes by the Saxons and the Danes until memorable year 1066, when by the bloody battle of Hastings and the defeat of the gallant Harold, it passed into the hands of William of Normandy, usually called the Conqueror. This was the most important event of modern times ; not only as it affected the fortunes of the little island where it took place, but as it affected civilisation itself, in bringing into existence a new language and a new people, whose influence has been more wide-spread and more deeply marked than any other in the annals of history.

The language of the Normans, now known as the Norman-French, was a mixed dialect, composed of the original Gallic language of the country and the Latin language of the early conquerors. It thus contained a large number of words of Latin origin, though changed and corrupted, as we find them now in the Romance languages. This mongrel speech was now introduced into England, and became the language of the Court and of the upper circles. Every effort was made to foist it upon the people, to the exclusion of the Anglo-Saxon. All the laws were written in the Norman-French ; all judicial proceedings were conducted in that language ; no legal document, no contract, no article of agreement was binding, unless made in the language of the conquerors. Thus a struggle began between the two languages, which continued for nearly two hundred years. The weight of the great mass of the people was on the side of the Anglo-Saxon ; the influence of the dominant class was in favor of the Norman-French. This was a very powerful influence. " The Conqueror and his descendants to the fourth generation," says Macaulay, " were not Englishmen ; most of them were born in France ; they spent the greater part of their lives in France ; their ordinary speech was French ; almost every high office in their gift was filled by a Frenchman ; every acquisition which they made on the Continent estranged them more and more from the population of our island." The struggle was long and obstinate. The natives were held in a degraded condition, and their language was held to degrading uses. We catch a glimpse of the condition of things during that restless period, in Scott's " Ivanhoe."

The history of the English nation as such, and the history of English language properly, date from an event which, as Lord Macaulay remarks, has been generally represented by her historians as disastrous,

but which was really a blessing in disguise. This was the defeat of King John by Philip of France, in the early part of the 13th century, by which England lost Normandy and her other continental possessions. Forced by this circumstance into the narrow limits of their insular dominions, the people of all degrees came to regard England as their home, and themselves as Englishmen. There came about an amalgamation of Saxon and Norman, and a blending together of those languages that had long struggled with each other for the mastery. As two rivers that have long pursued parallel courses, at length unite in one broader and grander stream, so did this final fusion of the peoples and the tongues result in a grander and a nobler tongue than either had alone been before. " Then," says the historian, " was formed that language, less musical, indeed, than the languages of the south, but in [force, richness, in aptitude for all the highest purposes of the poet, the philosopher, and the orator, inferior to that of Greece alone." Such was the origin of the English language as we have it to-day ; and to this Norman-French element is due a great part of that Latin infusion which we find in the language.

The Latin element in the English language owes its greatest increase, finally, to the revival of learning. This began a little earlier than the Reformation. " The Reformation," says Dr. Trench, " indeed had a scholarly, we might say a scholastic, as well as a popular aspect. Add this fact to that of the revival interest in classical learning, and you will not wonder that a stream of Latin, now longer than ever, began to flow in our language." This stream has never yet ceased to flow, and the consequence is, as we have seen, that not less than thirty per cent. of our English language is of Latin origin. But this foreign element has had no effect upon the grammatical construction of the language. That remains intact. " Not a single drop of foreign blood," says Max Müller, " has entered into the organic system of the English language. The grammar, the blood and soul of the language, is as pure and unmixed in English as spoken in the British Isles, as it was when spoken on the shores of the German Ocean by the Angles, Saxons and Jutes of the continent." Dr. Trench remarks, " The Anglo-Saxon is not so much one element of the English language, as the basis of it. All the joints, the whole articulation, the sinews and ligaments, the great body of articles, pronouns, conjunctions, prepositions, numerals, auxiliary verbs, all smaller words which serve to knit together and bind the larger into sentences, these, not to speak of the grammatical structure, are Saxon. The Latin may contribute its tale of bricks, yea, of goodly stones, hewn and polished, to the spiritual building ; but the mortar, with all which binds the different parts of it together, and constitutes them a house, is Saxon throughout."—*Pittsburgh Pa.*

Pensylvania School Journal.

THE JOURNAL OF EDUCATION,

QUEBEC, JANUARY AND FEBRUARY, 1879.

The Canada Educational Monthly and the Paris Exhibition

We have received the first number of " The Canada Educational Monthly and School Chronicle," edited by G. Mercer Adam, Toronto, and while bidding it welcome to the arena of educational journalism, we very much

regret to see among the editorial notes, an article written in a spirit of unfairness greatly to be deplored, and in which the writer very coolly takes occasion to deny to this Province any share of the honours won by Canada, in connection with education, at the Paris Exhibition. We refer to the following: "Those who laud, and properly laud, the efficiency of the educational system of Canada must, we fear, learn to speak of the country they eulogize in a somewhat local sense, referring particularly to the Province of Ontario and to the Maritime Provinces. That the Province of Quebec, at any rate, should be excluded from a share in the compliment is, unhappily, but too apparent, if the state of Elementary English Education, in the country parts of that Province is to be taken as a criterion of excellence. At the recent Paris Exhibition, it was specially noticed by French Educationists that the portion of *la belle Canada* (sic!) inhabited by the people of their own race and language, the Quebec Province, had little share in the honours won for the Dominion by the Exhibit in the Canada Educational Court." Now, how any one could put down in writing, for the press, the foregoing assertions with the official catalogue of rewards, published by the French Government, before his eyes, can only be accounted for by supposing that his respect for the truth is on a par with his *evident* knowledge of the French language. For upon opening the Catalogue at the Page 12, II Group, 6th. "Class, Primary Instruction—we find a Diploma (equal to a Gold Medal) awarded to each of the Provinces of Ontario et Quebec, a Diploma to the Christian Brothers Province of Quebec—a Silver Medal to H. Larochelle, Province of Quebec, for a system of mounted maps—a Silver Medal to A. N. Montpetit, Province of Quebec, for a series of School Readers, in the French language—Bronze medals to E. Chanteloup, Montreal, for School apparatus; to the Montreal School of Arts and Manufactures, to the Institution for the Blind, to the Institution for Deaf-Mutes (female) and to the Institution for Deaf-Mutes (male) all of Montreal—Honorable Mention to Chevalier C. Baillargé, of Quebec, for Stereometrical Tableau—to Rolland & Fils, Montreal, for school books, &c. J. B. Carter, Toronto, Copp, Clerk & Co., Toronto, and Novelty Works Brockville, Ontario, for School appliances, &c. A first class Diploma equivalent to a Gold Medal was also awarded to the Honorable P. J. O. Chauveau, for his very valuable work *L'Instruction Publique au Canada*," and a diploma of the same class to Mr. G. Hodgins of Ontario.

In *Class 7. Organisation and Appliances for Secondary Instruction*.—we again find the two Departments of Education of Ontario and Quebec receiving a first class diploma of equal value. A silver medal to the Montreal Polytechnic school—and a bronze medal to Mr. May of Ontario. Honorable Mention is again awarded to Chevalier Baillargé, in this class. In *Class 8, Superior Education* a diploma equivalent to a silver medal is awarded to each of the Departments of Education of Ontario and Quebec. Silver medals to Professor Macoun, of Belleville, Ontario, for a *Flora Canadensis*, and to McGill University, Montreal. The foregoing list gives therefore *fourteen* Diplomas and Medals and *three* times Honorable mention to the Province of Quebec—against *six* Diplomas and medals and *three* times Honorable Mention to the Province of Ontario.

We may also draw attention to the fact that although the Educational Departments of Ontario and Quebec received Diplomas of equal value in the various classes, there was this difference in the Exhibits: that whilst Ontario exhibited the appliances, books, charts, &c., used in her schools, her educational tools, so to

speak, Quebec exhibited the *results* obtained from her educational machinery in the everyday work of the pupils in the various schools of the Province, and that at very short notice, as will appear by the following extract from a Circular of the Superintendent of Education of Quebec addressed to the local school authorities, dated 10th December 1877. "There are two ways of organizing an exhibition: the first consists in holding up to the admiration of the public exceptional productions of pupils; we do not wish to adopt this method: the second consists in exhibiting a whole collection of work instead of one piece of work. The latter method the Commission believe to be preferable, or rather the only proper one in Educational matters. We do not wish to send selected work to Paris, and thus mislead persons to imagine that we have rare talents in our schools, but prefer showing that our system is good in its integrity from the university to the public school. To this end our system must be shown as it is, and as it works daily, exhibiting the work of the professors and the daily tasks of the pupils. With this view the Commission proposes to establish in all the higher educational institutions, a general competition, which will begin as soon as possible, and end at the latest by the 15th February next."

Thus it will be seen that the work exhibited was collected within the space of two months, without previous preparation, and then the greater part of the schools sent the work of only a week or a fortnight; neither had the Quebec Department of Public Instruction the advantage of profiting by the experience gained by the Ontario Department at the Centennial Exhibition, Philadelphia.

With the foregoing facts before them we can safely leave it to our readers to judge if our contemporary be justified in setting up the Province of Ontario and the Maritime Provinces, which latter are not even mentioned in the Official Catalogue, as the sole representatives of enlightenment and educational progress in the Dominion of Canada.

The *Montreal Gazette* of the 6th instant, in an article referring to the unjust assertions of the Educational Monthly with regard to the French Canadians, says: "We really cannot reconcile this reflection (if it be grounded) with the fact, to which we had the pleasure of calling attention about a month ago, that special honours were conferred by the French Department of Public Instruction on four gentlemen interested at various times and in various capacities and degrees, in the educational work of the Province of Quebec. A gold medal was granted to the Hon. Mr. Chauveau, formerly Superintendent and Minister of Education, for his excellent work, "*L'Instruction Publique au Canada*;" the Hon. Mr. Ouimet, the present Superintendent and the late Dr. Meilleur, ex-Superintendent and the Hon. Mr. Chauveau were created "*officiers honoraires de l'Instruction Publique*" and Mr. U. E. Archambault, principal of the Catholic Commercial Academy of this city, was created "*officier d'Académie*." No more graceful acknowledgment could be given by France of her appreciation of the progress made in education by the descendants of Frenchmen in the Dominion, and no better evidence could be adduced of the incorrectness of the notion that in Lower Canada we are altogether behind the times in so all-important a matter.

We would also wish to draw the attention of the writer in the Educational Monthly to the following extract from the same article, in which he may find that the Province of Ontario is more indebted to this part of *la belle Canada* than he was perhaps aware of:

“ There is just one other point which it may be well to mention, as it is one of which we fear a good many persons in Canada are ignorant. It is not either to Ontario or to the Maritime Provinces that the people of the Dominion are indebted for the place which their country occupies in the greatest work which has ever been devoted to the cause of educational progress. We mean the *Encyclopædie desgesamten Erziehungs und Unterrichts-wesens*, edited by Dr. Schmidt, or Stuttgart, the greatest of modern writers on the history and methods of education. This immense work, the “Encyclopedia of Education and Instruction,” a new edition of which is issued every ten years, is published by the firm of Besser, at Gotha. During his comprehensive educational tour, in 1867, through the chief countries of Europe, the Hon. Mr. Chauveau became acquainted with Dr. Schmidt, who deeply regretted that the information which he received from his Canadian guest and fellow-worker in the cause of education was too late for the edition of the *Encyclopædie*, which was then approaching its completion. The next best thing was to ensure the insertion of an article on Public Instruction in Canada which should be worthy of the subject in the succeeding issue. This, accordingly, Mr. Chauveau undertook to furnish. Although the enterprise entailed no ordinary labour and research, he possessed greater facilities for the task than any one else, as well from the position which he had so long and so honorably filled as from his rare gifts as a writer. When his manuscript arrived at Stuttgart, and before the translation into German was commenced, the publishers were at first unwilling to allow Canada so much space. But Mr. Chauveau remained firm and Dr. Schmidt yielded. Thus it comes that “Canada” occupies no less than sixty-seven pages in the great Encyclopedia of Combined Education and Instruction, being, in this respect, on a footing with all the great countries of civilization. And for this honour the Dominion is indebted to the Province of Quebec.”

As to the *boarding round* system denounced by the Educational Monthly, we will not pretend to defend it: the system is a bad one, and the sooner it dies out the better; it has been brought about by exceptional circumstances which the Ontario people have not to contend against, and which they do not understand, but at the same time we can say that the statement of the Monthly that it “extends over a large area of even “the oldest and richest counties of the Eastern Townships” is very much exaggerated, cases are few and far between, and the practice is totally unknown among the French Canadian inhabitants of this Province.

Obituary.

Our readers have already heard with regret of the demise of Dr. Meilleur. This distinguished gentleman died in Montreal on Saturday the 7th of December last, on the very day when he was to have been publicly honored with the decoration of Academical palm with the title of “Officer of Public Instruction. This flattering mark of appreciation came from the French Government as one of the results of the Educational Exhibition of this Province at Paris.

Dr. Meilleur was born at St. Laurent, near Montreal,

on the 9th May 1796. Having finished his classical course in Montreal College, he studied medicine at Castletown in Vermont State and there received his Medical Diplomas in 1825. In 1834 he was Editor of “L’Echo du Pays” and was elected to Parliament. His career was ever that of a good man and faithful servant of his country.

To Dr. Meilleur was confided the difficult task of putting the school laws of 1841 into execution. The history of these school laws must be well known; still the rising generation would scarcely conceive what opposition this law, met with in the country places. Open rebellion incendiarism, and persecutions of all kinds, were the means of resistance suggested by a class of men whom the press speedily dubbed “*extinguishers*”. Yet this law is still the present basis of the system in actual use. The Superintendent showed an energy and perseverance worthy of all praise and was ably seconded by the Roman Catholic clergy and the greater number of educated men. The clergy published circulars interfering directly in the matter, and the Bishop of Montreal went so far as to interdict one of the refractory parishes.

Dr. Meilleur rose triumphant over all these obstacles, and the name of our first Superintendent will not be easily forgotten in the history of this province. The “*Memorial de l’Education*” is a work which can always be consulted with benefit, and in Dr. Meilleur’s circulars will be found the seed whence sprung the rich harvest which during twenty years we have reaped in the field of public instruction.

Honours.

Our readers will no doubt be pleased to hear an account of the honours conferred by the French Government on the Honble. Mr. Ouimet, Superintendent of Public Instruction for the Province of Quebec, Dr. Meilleur, the Honourable Mr. Chauveau, and on Mr. Archambault, the worthy superintendent of Catholic Schools, Montreal. The International Jury awarded diplomas for the Educational Exhibit of the Province of Quebec; but Mr. Bardoux, Minister of Public Instruction in France, wished to give to those who had brought our educational system to its present high position, a particular mark of esteem and distinction as will appear by the following letter:

Paris, 15th november, 1876.

To the Honble. Gédéon Ouimet, D. C. L.,

SIR,

I feel much pleasure in informing you that you have been raised to the rank of “Officer of Public Instruction” by Mr. Bardoux, Minister of Public Instruction. I am happy to tell you that Mr. Chauveau and Dr. Meilleur has also been granted the same decoration. Finally your very humble servant has been made an

"Officer of the Academy" on account of the services which he is charitably supposed to have rendered as member of the International Jury.

The same number of decorations has been granted to the Province of Ontario, in the persons of Messrs. Crooks, Ryerson and Hodgins, as Officers of Public Instruction and Dr. May, my colleague on the Jury, as Officer of the Academy.

The highest grade is that of "Officer of Public Instruction." The decoration consists of golden palms with purple *rosettes*; the Officer of Academy wears silver palms with a purple ribbon. I am to be the bearer of your decoration as well as those of Mr. Chauveau and Dr. Meilleur.

Please accept my very sincere congratulations and believe me to be,

Your very humble servant,

U. E. ARCHAMBAULT.

The following is the translation of the Ministerial decree forwarded to Hon. Mr. Ouimet.

MINISTRY OF PUBLIC INSTRUCTION, WORSHIP, AND FINE ARTS.

The Minister of Public Instruction,
Worship, and Fine Arts,

Considering article 32 of the original decree of the 17th March, 1808;

Considering the royal ordinances of the 14th November, 1844, 9th September, 1845, and 1st November, 1846;

Considering the decrees of the 9th December, 1850, 7th April and 27th December, 1866;

ORDAINS :

MONSIEUR OUIMET, Minister of Public Instruction at Quebec, is named Officer of Public Instruction.

Done at Paris, the 12th November 1878. The Minister of Public Instruction, Worship and of Fine Arts.

Signed: A. BARDOUX.

For Duplicate :

The Chief of the Archives Office, }
H VALMORE.

We translate from the *Minerve*, an account of the *fête* at Montreal, on the occasion of the presentation of this diploma to Mr. Ouimet.

The distinguished honours conferred by the French Government on the Department of Public Instruction for the Province of Quebec, on account of its educational exhibit at the Universal Exhibition at Paris, were the occasion of a magnificent demonstration, on Saturday evening (7th December 1878), in the Academical Hall of the Plateau School, in honor of U. E. Archambault, Esquire, Special Commissioner of the Department of Public Instruction. The meeting was presided over by Hon. Mr. Ouimet having on his right and left the Honble. Mr. Chauveau and Mr. Archambault, near whom sat the Revd. Mr. Methot, Vice Rector of the Laval University, Messrs. P. S. Murphy, E. Murphy, and Jacques Grenier, Catholic School Commissioners, the Revd. Mr. Sorin, the Hon. Judges Jetté and Laframboise, M. le Chevalier Drolet, Alderman Rivard, Revd. Mr. Godin, Assistant Principal of the Jacques Cartier Normal School, Messrs. C. M. Desnoyers, L. O. Loranger, M. P. P., Geo. Desbarats, and a large number of our most influential citizens. Principal Lacroix of St. Mary's Academy presented an address to Mr. Archambault in the name of his fellow professors, after which the Orchester gave the Overture from Boieldieu's *Jean de Paris*. The organizers of the festival were for a long time undecided upon the

choice of what should be the literary *pièce de résistance* of the evening, but they finally adopted that chief d'œuvre of the French Drama, at once so classical and christian, *Polyeucte* by Corneille.

Mr. Archambault then rose amid enthusiastic applause and overcoming his evident emotion spoke as follows :

Allow me to thank you very sincerely for the magnificent demonstration and affecting reception which you have tendered me. I must acknowledge that I have a right to but a small share of the praise which you are kind enough to give me, since I only sought to do my duty, and if I have done so I would consider myself amply rewarded. Whilst presenting me with those addresses of welcome, you at the same time celebrate, to-night the triumph of the Educational Exhibition, and consequently your own triumph, for without your efforts, we would have been unable to have prepared it or to collect the exercises of the pupils, and thus to show the working of our schools. The stamp of sincerity which distinguished the daily work of your pupils was fully appreciated by the Jury.

Before organizing our Educational Exhibit, circulars were sent to our various Educational Institutions requesting their cooperation. In answer to this request many thought proper to abstain, giving as a reason that it was too late. With such an answer one can get out of many difficulties. Happily many responded with the best good will possible. The work submitted was carefully examined by the committee named for the purpose, and the result of its labours was that a sufficient number of exercises, very fairly prepared, were collected to form a School Exhibit. I may remark that if there had not been so many withholding, the results would have been much more complete. However the late date at which we commenced to collect and classify our exhibits, and the brilliant results we obtained show, that our system of instruction is even much better than that which we exhibited.

When I left to represent you at Paris, some persons may have thought that I was undertaking a pleasure trip, but I considered my mission a very serious one, and I did my best to fulfill it to the best of my ability. Upon my arrival in Paris, where every thing was strange to me, I found some difficulty, at first in organizing my Department;

My fortunate meeting with M. le Chevalier Drolet, member of the Canadian Commission at the Exhibition, Mr. Sévère Rivard, who, although not on the Commission did all in his power to assist, and of Mr. Paul de Cazes, who by his influence and his writings has done so much to make the Province of Quebec known abroad, was of the greatest assistance to me, and I now take this opportunity to publicly thank those gentlemen for their valuable services. When the Educational Department of the Exhibition was organized, I had the honor of being named a member of the International Jury, and in that capacity I had the opportunity of being better able to look after our own interests.

Let us now recapitulate the successes which we obtained at Paris. We have obtained a first class diploma for elementary instruction, and a like one for model schools. It had been decided that Governments and contributors should receive diplomas equivalent in every respect to medals. A first class diploma was awarded to the Hon. Mr. Chauveau for his admirable work "L'Instruction Publique au Canada." The superb collection of school books, Canadian Literature and Poetry of Canada, exhibition by the Department of Public Instruction obtained a gold medal. We had the advantage of having among our exhibits the work of the various educational institutions of our Province :

Classical colleges, commercial and manufacturing schools, schools of the Christian Brothers, Convents of the Religious orders, Academies and schools directed by lay-men, special schools for the blind, deaf and dumb, schools of arts and manufactures, Montreal Polytechnic school, all well represented and formed a very complete group.

The Christian Brothers obtained a renewal of diploma which they had obtained in 1867, with the qualification of "Progress" for the excellent tuition they give in France and in Belgium, and I add the honor of having added, in Canada. The Polytechnic School founded by the Hon. Mr. Ouimet, had the honour of obtaining a silver medal, Mr. Montpetit for his series of school readers, and Mr. Larochelle for his mounted school maps each received a silver medal. A bronze medal was awarded to the following institutions, the Nazareth School for the Blind, the school for Deaf-Mutes, male, ditto, female, and the schools of drawing under the control of the Board of Arts and Manufactures.

I have now to present the crowning honour amongst the successes obtained at the Exhibition, it is a title of honour awarded to three eminent men who have succeeded each other in the Superintendence of Education in the Province of Quebec, since 1842.

I have the honour of being entrusted with presenting to these gentlemen the highest distinction which it was in the power of the Minister of Public Instruction of France to award, that is, the academic palms in gold, with the title of Officer of Public Instruction, to the venerable Dr. Meilleur, whose much to be regretted demise we all deplore, but whose children will inherit the glory of their father, a glory which he had gained by the active part which he took in the organisation of public instruction, and in the forming of our excellent education law which gives such complete justice to all religious denominations: to the Hon. Mr. Chauveau for the active part which he has taken in the direction of Public Instruction during the last twenty years, for his valuable literary labours, for his magnificent work *l'Instruction Publique au Canada*, for founding the *Journals of Education*, and in particular for the establishment of Normal Schools, those nurseries from whence may be drawn the good teachers who make good schools. I would draw Mr. Chauveau's attention to the peculiar circumstance in which I find myself. I had the advantage of being one of the first pupils of the Normal School which he founded, and the coincidence is rather remarkable that one of the pupils of that school should have the honour of being the bearer to him of the titles and distinctions awarded to his merits. To the Hon. Gédéon Ouimet, for the active part which he took in the advancement of those same Normal Schools, for having so largely contributed towards the organisation of the Educational Exhibition, and for the founding of the Polytechnic school, an Institution where the course of studies was very highly appreciated in France. If I have myself received the academic palms, I owe that honour to having been a member of the Jury. The palms which decorate the noble breasts of Messrs. Chauveau and Ouimet are of gold—mine are of silver—the difference is immense, yet I wish that there was but that difference only between the merits of those gentlemen and my own.

With the academic palms, accept, Hon. Messrs. Chauveau and Ouimet, the diplomas which confer upon each one of you the title of Officer of Public Instruction. In conclusion, I beg to thank the audience for their very kind attention, and to graciously consider that the fatigues of travel did not leave me sufficient leisure to prepare a discourse worthy of the occasion.

M. Archambault resumed his seat amid the unanimous applause of his hearers when Hon. Mr. Chauveau rose and spoke somewhat as follows.

MR. SUPERINTENDENT, LADIES AND GENTLEMEN :

It is with difficulty that I suppress the emotion which I feel at this moment, and yet such a feeling is quite legitimate, for I would surely be very callous not to be deeply moved. I thank the local Superintendent for the too kinds terms in which he has spoken of me. The remarkable coincidence which he pointed out to you had just presented itself to my mind; I will add however that, when at the request of the Abbé Verreau, Director of the Normal School, I recommended Mr. Archambault to the Catholic School Commissioners of Montreal as Principal of their new Academy, I little thought, with all the favorable opinion I had of his talents and his conduct, that he would be called to the important mission which he fills to day. It was after a mission similar to his that that school was founded, and I consider the foundation of the Commercial Academy as one of the results upon which I pride myself most. So it was but just that after so skillful a Superintendence, he should be chosen in his turn to represent it at the Universal Exhibition.

Ladies and Gentlemen, there is no lasting pleasure in this world, or as we say, there is a reverse to every medal. Between the gayety of this charming festival and the sad news which spread through the City to-day there is a very painful contrast. In the Great City of ancient Rome from which we have had to-night some scenes admirably represented, there were runners who during their course handed torches to each other. Well one of such champions after having carried long and nobly the lighted torch of education has just fallen in the race. I allude to the venerable Dr. Meilleur, whose memory is dear to all Canadians.

Allow me also to thank the School Commissioners for the founding of this magnificent establishment, and of the Polytechnic School, in particular, as well as for the share they took in getting up the Educational Exhibition. I renew my thanks to the organizers of this splendid festival for having invited me to it, and I will add in conclusion, that if there have been in my life many moments which recall pleasant memories to me, there are few which have made a more vivid impression upon me than that which I experience at the present moment.

Hon. M. Chauveau's discourse was received with thunders of applause; he was followed by the Hon. Mr. Ouimet who spoke as follows, addressing himself to Mr. Archambault:

I join with all my heart in the words of welcome which have been addressed to you this evening. Those good wishes were yours by every right. They come from hearts that love you, because it is already many years since they have learnt to appreciate you. You have been for a long time intimately connected with public instruction in this Province, it fell therefore to your lot to fulfil a mission in connection with your efforts for the success of the Educational Exhibition. I had the advantage of working with you in preparing those exhibits. I remember that a few months only before the opening of the Exhibition, nothing had been decided, nothing was ready—we both resolutely went to work, and after many days and many weary nights of labour, we obtained the results which we all know now. If my work was incessant, I may thank your perseverance, which I might call unquenchable, as if perseverance could be otherwise. We endeavoured to show to that France, which knows us so little and

which we love so much, to that Paris the Capital of the civilized world, that education was widely spread through the Province of Quebec, and that we were not exactly savage Iroquois. In the copy books of exercises submitted, may be found the cause of what has been our chief distinctive trait since the foundation of the colony, that which has always been and still is respected amongst us, and that which too great a number of persons have forgotten in the sunny land of France; I allude to our christian faith, to our religion. It is a great glory for us, Mr. Superintendent to be able to say, as you remarked just now, that in our schools we practice the duties of a Christian, as Christians ought to practice them each one in his own faith.

The honour conferred on the Province of Quebec as shewn by the number of diplomas conferred, is somewhat eclipsed by the judicious choice made of you by the French Government as one of the members of the international jury—it was an acknowledgement of true merit, and a reward that was yours by right as the true organizer of our Educational Exhibit.

As to the honours which you have been deputed to confer upon me, I may certainly say that I was far from expecting such a distinction. I accept them with gratitude, as a compliment paid to the Province of Quebec and to our system of Education.

Your name, Mr. Chauveau is known not only in our own country and all over the American continent, but it is equally well known on the European continent and especially in France. It is not surprising, therefore, that your very interesting work on Public Instruction should be awarded a diploma; and it is a great honour for us French Canadians to see appreciated in a foreign land, the worth of one who was for so many years Superintendent of Public Instruction in this Province.

The first one to lay the foundation stone of this great work of Public Instruction, is he whose loss we have to mourn to-night. We cannot admire too much the efforts made by the venerable Dr. Meilleur to put in operation this law of Public Instruction, so important and yet so difficult. His indomitable energy alone could have overcome the many obstacles which would have deterred any other. Alas! Death has carried him away before he could receive the well merited reward which was destined for him.

Mr. Superintendent, allow me to say that the decoration which you have received is not alone due to the fact of your having been made a member of the jury, but it came to you as your reward for the magnificent Exhibition which you made of the work of the pupils of your academies and of the Polytechnic School. It was justly considered that the Principal of such an institution truly deserved and would worthily wear the academic palms.

After the prolonged applause which followed the speech of the Honorable the Superintendent of Public Instruction, the proceedings were brought to a close by the orchestra playing Good save the Queen.

Meetings of the Protestant Committee of the Council of Public Instruction.

Since the last publication in the Journal of the proceedings of the Protestant Committee, three meetings have been held by this body, namely; 1o. On the 5th Day of December 1878, present Dr. Cook, the Lord Bishop of Quebec, R. W. Heneker, Esq., and the Honorable the Superintendent of Public Instruction, at which meeting, as there was not a quorum present, the above named

members formed themselves into a sub-committee for the transaction of business, Dr. Cook in the chair—the said business including matters of routine, the re-appointment of Messrs. Emberson and Weir to inspect the Protestant Model Schools and Academies of the Province, provided this be not objected to by a majority of the Committee before the end of the current month, and a resolution to the effect that Stanstead Ladies' College, Compton Ladies' College, the Academic Department of St. Francis College, and Lachute College, be embraced in the same inspection:

2o. On the 26th Day of February 1879, present, the Hon. the Superintendent of Public Instruction, when, it being Ash Wednesday, and a Public Holiday, the members present formed themselves into a sub-committee for the transaction of business, leaving their acts to be confirmed by a meeting of the body to be held on the following day. At this meeting the following business was done, viz: Lists were submitted shewing the Geographical distribution of Academies and Model Schools with amounts of grants recommended to be made last August, their order of merit according to the Inspectors' reports, with a map of the Province of Quebec having the positions of the Schools marked thereon. Directions were given to the Secretary to procure for the information of the Committee at its next meeting (in May); (1) The Protestant Population of each county; (2) Proportion of Academies and Model Schools per 1000 (of Population).

The suggestions of the Inspectors of Academies and Model Schools were left to be considered and reported upon by the sub-committee consisting of the Lord Bishop of Quebec, R. Heneker, Esq., and Dr. Dawson.

An application was read from the corporation of the Dunham Ladies' College requesting that the said College be inspected and reported upon. Communications were also read from the Trustees of the Cowansville Ladies' Academy, from the Rev. Mr. McAuley, President of the Stanstead Board of Examiners, and from the Clarendon Model School. Concerning the subject of Medical Matriculation Doctors Cook and Dawson made a report. Dr. Dawson moved the renewal of the application to the Government for an additional grant of \$1000, annually to the McGill Normal School. The Examination Returns from the different Boards of Examiners were laid before the meeting in connection with which the Secretary called attention to violations of the Amended Regulations. The Secretary was directed to call the attention of the Boards to the said violations and to state that the Committee enjoins that the Regulations be strictly adhered to, and that when these are not complied with no Diplomas shall be granted without reference to this Committee:

3o. On the 27th Day of February, 1879, present the Hon. Judge Day in the chair, R. W. Heneker, Esq., Dr. Cook, the Lord Bishop of Quebec, and Hon. G. Ouimet, Superintendent. The Minutes of the meeting of Aug. 28th, 1878, were read and confirmed, also the minutes of meetings held by sub-committees on the 5th of December 1878 and 26th February 1879. After routine business, notices of motion were submitted, viz: "That the Regulations for granting Diplomas to Teaching be revised"—"That, in addition to the Reports of the Universities of McGill and Bishops College, and that of the McGill Normal School, annually laid before the Committee, returns be requested of the annual examinations of these institutions, as well as of any Colleges affiliated to the Universities, or Schools connected therewith, and also of the Montreal and Quebec High Schools."

It was moved and unanimously resolved (1) "That a

financial statement shewing the revenue and expenditure for Protestant Education made up to the 30th of June in each year, be laid before the Committee" (2) "That the Hon. the Superintendent be requested to lay before this Committee, at each session, all such items of Correspondence with the Department as will enable the Committee to have a full knowledge of the working of the Educational system of the Province, so far as Protestant Education is concerned."

(3) "That the Returns of the Inspectors of all Protestant and mixed Schools be laid before the Committee."

(4) On the motion of the Lord Bishop of Quebec, seconded by R. W. Heneker, Esq., "That the sum of fifty dollars be granted to the Clarendon Model School for the past year, and that Mr. Emberson be instructed to include this School in the list (of those Schools) now being examined by him."

The Committee then adjourned.

N. B.—The following are the Amended Regulations relative to the Examination of Candidates for Teachers Diplomas referred to in the foregoing abstract of proceedings of the Protestant Committee :

Amended Regulations relative to the Examinations of Candidates for Teachers' Diplomas, adopted by the Protestant committee of the Council of Public Instruction, on the

"1. Article V of the Regulation to be amended as follows :

"Candidates shall be examined by written or printed papers on every subject, except Dictation, Reading, and Mental Arithmetic, with additional oral examination in such subjects as may require it, and the work shall be so arranged that the oral examinations shall be going on simultaneously with the writing of answers to the Papers.

"2. Articles VII & VIII shall be considered as modified by the change of Article V, and the Book to be used for Reading and Dictation shall be some ordinary school text-book at the discretion of the Examiners.

"3. The Examinations Papers shall be prepared by a Joint-Committee, of which the Examiners of Montreal and Quebec shall appoint each two members, and those of Sherbrooke and Three Rivers each one, with the Secretary of the Protestant Committee, who shall act as Convener and Secretary, and the questions shall be circulated under seal to the different Boards to be opened by them on the days fixed for Examinations and in the presence of the Candidates. The answers shall be read and decided on by the Local Boards, and sent to the Secretary of the Joint-Committee, who shall report thereon to the Committee of Council three members of the Committee to be a quorum.

"4. The place for the holding of the meetings of Examiners shall be fixed by themselves; but shall be as central as possible; shall be, if possible, an education building; and, in no case where this can be avoided, a hotel or tavern.

"5. Every candidate for examination for an Elementary or Model School Diploma shall pay, before the examination, to the Secretary of the Examiners, in addition to his fee of \$1, the sum of \$1, and every candidate for an Academy Diploma \$2. These sums shall constitute a fund for paying the necessary expenses of the Boards of Examiners. The fees of the unsuccessful candidates shall not be returned, but they may come up a second time at a subsequent meeting of the Examiners without further fee.

"6. The Schedule of Subjects for Examination shall be as follows :

I. PRELIMINARY.

"All candidates for any grade of Diplomas must pass in the following subjects :—

	Marks.
1. English dictation (including Hand-Writing).....	50
2. English Reading.....	50
3. English Grammar.....	50
4. Arithmetic (ordinary rules).....	50
5. Geography (4 Continents and British North America).....	50
6. Sacred History (An Epitome of the Old Testament and one of the Gospels).....	50

"No candidate shall pass unless he shall have obtained one third of the Marks in each of the above, except Dictation and Reading in which two-thirds shall be required.

"Candidates for any Diploma, who have already passed in these subjects, may, be exempted from further examination in them."

2. SPECIAL.

(a) Elementary Diploma.

	Marks.
1. Art of teaching as in Abbott's Teacher and Morrison's Art of Teaching.....	100
2. History of England and of Canada.....	100
3. French, Dictation, Grammar and Reading, in the case of those who desire a certificate in that language.....	100

"Candidates must take at least two-thirds of the aggregate of the Marks to pass for a first class, and at least one third for a second class Diploma. Candidates in French taking two-thirds of the Marks shall be entitled to special mention of the subject in the Diploma.

(b) Model School Elementary.

	Marks.
1. English composition (a short Essay).....	100
2. Advanced Arithmetic & Mensuration.....	100
3. Geometry, Euclid, Books, I, II and III.....	100
4. Algebra including Simple Equations.....	100
5. French, Dictation, Grammar and Reading ...	100
6. History of England and of Canada.....	100
7. Art of Teaching, as above.....	100
8. Book-keeping.....	100
9. Use of the Globes, or Linear Drawing.....	100

"Candidates must obtain at least, one third of the marks in each Subject. If only partially successful they may be awarded Elementary Diplomas.

(a) Academy Diploma.

1. Greek, Xenophon, Anabasis Book I and Grammar.....	100
2. Latin Cæsar, Bel. Gal. Book I and Grammar... ..	100
3. French, Grammar, Reading and Composition..	100
4. Euclid, Book I, II, III, IV and VI.....	100
5. Algebra, including Quadratics.....	100
6. History as above.....	100
7. Natural Philosophy, or Scientific Agriculture..	100
8. Art of Teaching.....	100

"Candidates must obtain at least one-Third of the marks in each subject.

" Teachers of French Schools may be examined in French, instead of English.

" No teacher shall receive a Diploma of the first class for a Model School or Academy unless he shall have obtained two-thirds of the total number of marks in the special examination for the Diploma.

1. " It appears that some Boards give full marks for reading Others find the candidates very defective in this important subject. It is recommended that much attention be given to accuracy and style of reading.

2. Boards of Examiners will observe that it is imperative that the fees should be prepaid. The Examiners are authorized to expend so much as may be necessary of the fees for stationary and books, and for hiring examination-room, if necessary, and for travelling expenses of Examiners from a distance,—any surplus to be transmitted by the Secretary of the Board with an account of expenditure, and number of candidates entitled to re-examination without Fee to the Secretary of the Committee on or before December 1st in each year.

3. Under the Head " 2 special (a)," " Elementary Diploma,"—the two thirds required is the aggregate of Art of Teaching, History of England and History of Canada. It is also understood that candidates for French certificates are held to pass in the English Branches. Should Candidates offer knowing French only without English, these may be examined, but such cases must be regarded as altogether exceptional, and their acquaintance with French only, must be specially mentioned in their Diploma. It is understood that all French Teachers of Protestant Schools are expected to know English as well, and that the French in the Model School and Academy Examination is imperative on all. Teachers, however, may be allowed to answer the question in French, and may have the questions translated to them at the discretion of the Examiners. Further " in the (b) Model School Diploma," " use of Globes, or Linear Drawing " should be number 9, and " in (c) Academy Diploma " " Natural Philosophy " or Scientific Agriculture " should be number 7, and Art of Teaching number 8.

4. Special attention is directed to the requirement on the part of Elementary Teachers of an examination in the Art of Teaching, and in Canadian and English History, and it is suggested to republish the regulations with these explanations in an early number of the *Journal of Education* to be sent to all schools, and to each member of the Board of Examiners. It is also requested that a thousand extra copies be placed in the hands of the Secretary for distribution.

5. It is suggested that specimens of the Examination-Papers might be occasionally published in the *Journal of Education* for the information of Teachers and intending candidates, and that copies remaining over after the examinations be circulated by the Secretary."

REGULATIONS FOR DIPLOMA EXAMINATIONS :

1. The examination-papers to be forwarded by the secretary to the presidents of the boards.

2. At the meetings of the several boards, on the morning of the examination, the president or chairman of the meeting, to open the papers, and cause them to be distributed to the candidates.

3. If there be no candidate for any diploma, the papers set for that diploma to be returned unopened to the secretary.

4. The times and places of meeting of the several boards for holding the examinations to be advertised by the secretary of each board.

5. No omissions or alterations to be made by the examiners in any of the questions printed.

6. The examiners to take due care in the placing of candidates, &c., to prevent copying or communication of any kind.

7. Pens, ink and paper to be provided for each candidate, and no other paper than that provided to be allowed to be used.

8. Writing to be on one side of the paper only.

Address of Dr. M. H. Buckham, President of the University of Vermont.

(Delivered before the Protestant Provincial Teachers' Association, P. Q., at the Annual Convention, Oct. 26, 1878.)

MR. PRESIDENT AND FELLOW TEACHERS :

I hope that you will not regard it as a mere compliment when I say that I consider myself highly honored in being invited to speak to you on this occasion. Though an American by citizenship and long residence, I am an Englishman by birth and a Canadian by domicile in boyhood, so that I have a kind of right to be interested in everything that interests you. And I hope also that you will credit me with full sincerity when I say that I have been greatly impressed by the exercises of this Association which I have witnessed. I shall not disparage to you the merits of my brethren in the profession at home, but I shall tell them that we might learn something from the earnestness, the thoroughness and the courage with which you deal with educational problems here. One thing which surprises me is that we have hitherto known so little of each other. If there cannot be a commercial reciprocity treaty, surely there may be, and there should be, an educational one. You are going over very much the same ground that we are, encountering much the same difficulties, working toward the same results. Only in one respect, so far as I have observed, do we materially differ. It struck me somewhat strangely, at first, that you should call yourselves the *Protestant Teachers' Association*, until I remembered the peculiar legal relations of the religious bodies in this Province, and the necessity you are under of maintaining your distinctive character and rights as Protestants. There are some who think that we have before us, in the United States, a similar problem to solve, but I trust we have escaped that in having had a more fortunate historic development than yours has been. With this one exception, we are, on both sides of the line, working in the same spirit and for the same object, and it shall not be my fault if hereafter we do not know more of each other.

It is a significant fact that the highest degree conferred by the universities of all Christendom is that of " Doctor," teacher. To be qualified to teach in any art or mystery—in law, medicine, theology, music—is supposed to imply the highest degree of attainment in that art. One may become a bachelor, baccalaureate, ivy-crowned, as a reward of study ; a master, even, who may lecture and have pupils ; but the full dignity of a recognized public " teacher " is reserved as the

highest university honor. The theory of academic degrees culminating in the doctorate is profoundly true. The satire comes in with the application of it. When Mr. Agassiz signed his last will and testament, "Louis Agassiz, teacher," with unconscious irony he suggested what "doctor" ought to mean, and how much more plain "teacher" does mean. But the original truth of the title stands. The teacher who deserves the name belongs at the head of his brethren in any profession. He is the rare man sifted out of the thousands of ordinary men, the hundreds of able men, the score of superior men. The great teacher ranks with the two or three leading men of his state or nation. Greece produced a whole galaxy of great poets, orators, statesmen, generals, but only one great teacher. England could blazon the walls of half a dozen Westminster Abbeys with the names of her great lawyers, physicians, divines, artists, philanthropists, but she has had only one Doctor Arnold. How many great teachers has Canada produced? Some, I doubt not, whom you would name with well deserved admiration, and I should render the same homage to a few justly distinguished American teachers. And yet the names which each of us could mention with any hope that they would be familiar to the other, would be few indeed. But to speak of our own times and the schools and teachers of our own localities, how rare is a thoroughly good teacher! Ask the presidents of colleges, the chairmen of school boards, the superintendents of city schools, what they find to be the most trying part of their work, and they will tell you it is to discover the two or three or half dozen teachers among the scores and hundreds of those who think themselves qualified to teach. I verily believe that it is easier to find five first-class preachers, or physicians, or lawyers than one first class teacher. And yet the one thing which the largest number of those who have a little education think they can do is to teach. Let business get a little dull, and immediately there is a large accession of applicants for opportunities to teach from almost all the other employments. Clerks, book agents, patent medicine vendors, lightning-rod peddlers, insurance agents, all appear to think that when all other employments fail, there are always two things that remain—one is to teach, the other, to turn tramp. Not the least evil of the present depression of business is the throwing into the ranks of competitors for positions as teachers, thousands who have no qualifications and no love for the work, who steal the bread from the mouths of competent teachers, and cheapen and degrade the whole process of education. One thing which such gatherings as this ought to do is to impress ourselves and the public with the idea that teaching is not only a profession, but a high and difficult profession, requiring peculiar and indispensable qualifications, to be entered only by assiduous preparation, rewarding with success only those who give to it enthusiasm, energy and patient labor. To this impression I shall endeavor to contribute what I can in the time during which I may hope to have your attention.

Is the art of teaching something that can be learned, or is it the gift of nature whose lack no art can supply? Here, as in other departments, the answer, is, that while conspicuous and brilliant achievements are possible to genius alone, that moderate and average merit whose aggregate is the world's hope, is within the reach of the average endowment raised to its best by application. And yet it is not quite true that any one of fair ability can make even a fair teacher. There is a certain something besides good sense and ordinarily good capacity, whose presence or absence determines success or failure.

What that is I do not know. It seems to be one of the indefinable things in character, like what we call tact in a clever woman of society, or magnetism in an orator, or insight in a physician. It is probably not a single trait or characteristic, but a resultant of several not necessarily the same in different individuals. It is not easy to say what particular traits one must have in order to be a good teacher, or how many good traits one may have and yet for lack of some one or some happy combination of those one has, prove a total failure. It would seem almost absurd to say that one may lack thorough knowledge and be a good, at least a successful teacher, or be lacking in good sense and balance of character, or even have some conspicuous and glaring faults. But such cases are not unknown. If they are not sufficiently common to establish any general truth, they are at least noticeable enough to make us cautious in our generalizations. There are, however, two or three infallible marks of teaching power which are constant amid all the variable traits and peculiarities. The first which I shall mention of these is the power to awaken admiration. I venture the assertion that no teacher can exert a strong influence over his pupil's minds who fails to secure their admiration. This is a very different thing from saying that a good teacher is a popular teacher. A teacher may be popular for the very things that make him a poor teacher, for being slack in his requirements, overready with his help, profuse in undeserved commendations. A good teacher is likely to be unpopular with a certain class at all times, and with all at times. Some of the poorest teachers I have known were always popular and some of the best have been at times unpopular. But the good teacher never loses the admiration of those who like him and those who dislike him. There is nothing more charming, there are few things in life more satisfactory, than the upturned glances of pupils to the face of an admired teacher. Why the teacher who has succeeded in inspiring the feelings indicated by those looks should find it easy to move and inspire those minds, we can readily understand. The very attitude means confidence, docility, the receptive and obedient temper. Some curious things come to pass between an admired teacher and his pupils. They seem to hang on his lips as though every word were too precious to be lost. Common things said by him sound to them like oracles. He makes a joke, poor enough if it came from any one else, but from him it is the essence of pure wit, and they all laugh not with counterfeited glee, as did the urchins beneath the rod of Goldsmith's schoolmaster, but with unfeigned delight. He makes an assertion which would be received from any one else with incredulity or opposition, but *ipse dixit* and that is enough to secure its ready acceptance. He makes a blunder, a plain palpable blunder which if any other teacher committed you would see derisive smiles passing round the class, but because he makes it, it goes undetected. There is no homage so flattering as this; no power so sweet to the possessor of it. The pedagogue's chair, after all, is the real throne; it rules not by force over reluctant subjects: it sways young minds and hearts capable of generous enthusiasm. This may serve to explain why the real teachers, the Samuel Taylors, the Taylor Lewises, keep on teaching to the end and die in the harness. The admiration of pupils, the frank and affectionate homage of the classroom, has become essential to their existence. The aroma of life were gone with that. If it be now asked, how does the teacher manage to inspire this admiration, the answer is that it is not by management at all. The coquette may so manage as to beget the kind of admiration she covets, but no arts or devices can win the

admiration of pupil for teacher. It comes largely from the admiration the teacher has for his pupils. There must be in the good sense of the phrase a mutual admiration. That man or woman has in him or her no capacity for teaching who does not admire, with absorbing and boundless admiration, the wonderful being with whom they have to do. We get enthusiastic by study of inanimate and irrational objects—rocks, plants, animals, stars—why should we not in the study of what is a thousand times more interesting and wonderful than any of them, a human mind in the spring time of its eternal year, a being that enfolds within itself infinite capabilities waiting for the warm breath of inspiration from another living soul to expand it into fairest bloom. I once heard a gifted woman, who was a mother and a teacher, say of those who were agitating for larger rights for women, "They need not pity us; our work is a great deal more interesting than man's work; we watch and superintend the unfolding of life, and there is nothing in the world so curious and full of interest as that; we busy ourselves about mind and heart, affections and habits, in young plastic natures; that is a vastly more interesting work than buying and selling, ploughing and hammering, caucusing and voting." But the true teacher finds material for admiration not only in the common human nature which is in every pupil, but in the individual traits of each. He not merely loves young persons in the abstract, as a great many do or claim to do, he admires each one for what he is, or at least for what he can be. When I hear a primary teacher say that she thinks that she has got the most wonderful children that teacher ever had, while I a stranger looking at them can see in them nothing wonderful at all, but only a lot of little tow-headed urchins just like any other lot, I, as a school commissioner, can see something to admire in my teacher. But when I hear a teacher always complaining of poor material to work upon, speaking harshly of his pupils, holding up their mistakes to ridicule and pitying himself that he has to be their teacher, I begin to think that that man ought to be in some other business. A large capacity for admiration is a prime requisite in a teacher: the critical faculty is in danger of being disproportionately developed. I know a teacher who says he does not dare read the *New York Nation*, a journal which never has discovered anything in the sun but its spots. He says that he finds the need of stimulating his faculty of appreciation, his power of discerning beauty in men and things, and that he dreads to have his admiration ridiculed, his enthusiasm dampened, his faith chilled by the perpetual carping and sneering of the *Nation*. The teacher must not be a pessimist. He must have the charity that believeth all good things, hopeth all things. He must believe that every pupil has in him the capacities of a glorious being but little lower than the angels, and this prospective greatness will stimulate his interest. It is said of an old German teacher that he met his pupils every morning with a profound bow, feeling himself to be in the presence of the future generals, magistrates, and ministers of the nation. It is more than pleasantries and more than flattery that suggests to many a teacher in small districts that she sees on the bench before her future senators, judges and governors. She looks upon her pupils with an admiring love which prophecies a greatness of which she sees the germ. And she shall not be disappointed. If she and others who follow her are faithful to their high trusts, these little ones shall be presidents, governors, judges, senators, or something still better, good and true men and women, faithful and useful wherever God puts them, and heirs of immortality.

Another trait which I reckon high among the prime qualifications of a teacher, is a fine sense of justice. The notion of a natural antagonism between teacher and pupil seems to get into the pupil's mind with the greatest ease and is expelled only with the greatest difficulty. When you have got the idea admitted that the teacher of right ought to be, and in fact is, the scholar's friend, not his taskmaster and enemy, then it takes still longer to get the fact recognized, if it is a fact, that the teacher is equally the friend of all scholars. It has never been found practicable in the school, any more than in the world at large to rule by love alone; there must be order and harmony, and that necessitates law, and law must be enforced. Hence in any school, of pupils however young, there grows up a judicial system, a *corpus juris*, which has an important influence on the moral sense of the pupil, making them keenly watchful of their rights, jealous of the power wielded by the chief magistrate, impatient of the least unnecessary or illegal restraint. The time has long gone by when the governing power in the school was in the arm that wielded the birch or the ferule. The school is now a constitutional government, the supreme authority in which is the rules of school, which the executive on his side is as much bound to obey as the pupils are on theirs. The school is not governed by the moral power law. Hence the extreme importance of having the law enforced by one who has a nice and refined sense of justice and regard for it in his own conduct. I believe that more pupils are set against their teachers by a real or imaginary sense of wrong received from them, than by all other things combined. It is sometimes astonishing to see how much pupils will bear with good humor from their teachers if it all appears to them to be just and equal, and how little will provoke rebellion if there is a suspicion of unfairness or partiality. Let a teacher create the impression among his pupils that he is extremely careful to have no one wronged, no one slighted, that the rights of his pupils are as dear to him as his own; and he may do almost anything with them. For it is not the more or less one has to do or even to bear at the requirement of a teacher which offends and galls him; it is the touching of his pride, the imputation upon his equality with others. I do not mean to say that the teacher is always unjust when the pupil thinks him so, for "no rogue e'er felt the halter draw with good opinion of the law," or of the judge either, but that it is a great gain to a teacher in getting hold of his pupils to impress them with his anxiety to deal fairly by them, even though he must at times deal severely. As a rule, severe disciplinarians are not unpopular with pupils. Probably the teachers whose discipline least hinders the admiration I have spoken of, are those who combine inflexibility with a firm and true sense of justice. Let a pupil understand on the one side that the teacher means to enforce the law, but on the other side that he personally interests himself against any undue or unequal enforcement of it, and the pupil will be less inclined to try how far he can go in disobedience with impunity, or to bear resentment for the necessary punishment which sustains law. And let me say that these remarks are specially applicable to teachers of very young pupils. If you could hear the story of school-day experiences told by the little ones to their mothers in the evening, you would be astonished to know how critically your school government is judged by your younger pupils, and how clear a sense of their rights, and of the rights of pupils as against those of teachers, you yourself are helping to develop. It is of the utmost consequence that you should never put it into these little ones'

heads that you care less to obey law yourself than to enforce it on them ; or that you ever stretch the law against them ; or that you have some favorites whom the law does not touch, or touches lightly. Undoubtedly this is the most fruitful occasion of disaffection, the suspicion of favoritism, a suspicion which few teachers wholly escape, and which many merit. Indeed, in one sense, it is impossible for the teacher not to have favorites—not to have a special admiration and affection for the bright, ardent, docile pupils, over the dull, indolent and turbulent ones. To expect precisely equal feelings and conduct toward these two totally unlike classes—and both are found in every school—is against human nature. In fact, a good teacher will not treat any two pupils exactly alike ; each is to be treated according to the demands of his disposition, temperament, bias, capacity, attainments. One needs to be encouraged by praise ; another to be checked by sharp censure ; another to be allowed to run on his own swift, willing course, with only the gentlest touch of the reins now and then for guidance. You can afford to treat nine-tenths of the complaints, if there are such, against favoritism, as either unavoidable or unfounded. But beware of the other tenth. That will work mischief. I mean beware of suffering your personal like or dislike of a pupil to affect your administration of the laws of the school in his or her case. Especially beware of making justice more severe towards the children of the poor and uninfluential than towards those from the higher ranks. Do not be vindictive or resentful. Show a pupil that you can treat his wrong-doing as an offence against law and not against you, and therefore that having punished in the interest of law, you can forget it in the interest of peace and good-will. In brief, while the ambition to be a popular teacher is to be shunned as a weakness, both a sense of duty and a desire for the highest kind of success should lead the teacher to covet the respect of his pupils for dealing with them justly and honorably in all things. And unless I am mistaken, this purpose, and a little experience in carrying it into practice, will bring every teacher to adopt for himself few plain general rules which will protect him from mistakes and his government from odium, such as these : never to charge a pupil with fault without strong evidence of his guilt ; never to administer reproof in public, unless in those rare cases in which after deliberation it is deemed best to make public shame part of the punishment ; never to administer any kind of reproof or punishment while under the influence of anger ; never to dispense reproof indiscriminately or by wholesale to a class or an entire school ; never to punish a whole class, by detaining them for instance, or increasing their task, for the offence of individuals whom you may not have been able to detect.

The qualification to which I should attach greatest importance is one which I hardly know how to designate by any word or phrase. I might call it knowledge of human nature, if this phrase had not come to mean a knowledge of the means by which man may be led by their weaknesses and evil desires to their own injury and other men's advantage. I might call it an acquaintance with psychology, if this would not be misunderstood as meaning an acquaintance with the abstractions written in books concerning the human soul. What I mean is in an insight into the mechanism and working of a young mind in process of unfolding ; and I call it an insight rather than a knowledge because it is rather a judgment to work by than a knowledge that can be stated. The teacher in short should be a practical philosopher competent to work upon mind in

accordance with the laws of mind, whether he is able or not to state those laws. Good teaching is assisting the mind in its natural process of development. Using the figure implied in the word development, and striving not to abuse it, we may say that if the various powers and faculties of the mind are involved upon each other fold upon fold, there is a natural time, order and manner in their unfolding, and that the hands which assist and accelerate the process should work in strictest harmony with the law of development working from within. Woe be to the rude and untaught fingers which tampering with a process ill-understood thwart its progress and mar its results ! Shame upon the ignorant presumption which so often intrudes its meddling marplotting mischief into this most intricate and most delicate of organisms ! Looked at from this, the true point of view, teaching is the most difficult, the most responsible of all human undertakings, involving the profoundest knowledge, the rarest skill, the most anxious conscientiousness. One thing is certain : the more experience we get in the work, the more experience we get in the work, the more difficult and trying does the work appear to us. The boy half way through his preparatory studies, the little miss not out of her teens, are ready to step jauntily into the position of teachers, without a suspicion that they lack any qualification for the office. We who are veterans, or growing to be such, tremble almost when we think how large and how subtle our knowledge of the human mind ought to be to justify our undertaking to control its development, and how little we know of our work ! And here again let me say that although the work of teaching is difficult and exacting along its whole extent its most difficult and exacting part falls to the primary teacher. To be a good primary teacher requires, in my judgment, a rarer combination of talents than to be a good teacher in the higher departments, especially it requires a clearer perception of the way the minds work. Very few persons within my acquaintance know enough to be primary teachers, and have their knowledge sufficiently at command—not nearly so many as know enough to be professors in college. It is said that the Jesuits put their new teachers in charge of their highest classes, then select from those who show the greatest capacity for teaching and put them in charge of lower classes, and so on down, giving the children in charge of the most capable and most experienced teachers. In this usage we find recognized, at least, this correct principle ; that the main thing to be regarded in teaching is the person who is taught, and not the subject in which he is taught ; that although it may be a more difficult thing to teach philosophy than to teach rudiments, it is more difficult to teach children well than to teach men. Let it be understood that we do not educate children in order that they may acquire knowledge of certain scholastic subjects, but we require them to get a knowledge of those subjects in order that they may be educated. In other words, an educated person is not one who has a good knowledge of arithmetic, grammar, geography, highest mathematics, the languages, history, philosophy, but one who has a good memory, good reasoning powers, a good taste, a good command of language, and a good fund of available knowledge on which to exercise his powers. The objective point of teaching is not knowledge, or not knowledge merely, but increased quantity and improved quality of mind. The teacher, therefore—the good teacher—understands that his field of work is mind. The sciences are but his tools which he uses to work and shape mind. The teacher is of necessity and perpetually a student of mind—a practical psychologist.

He has opportunities for making discoveries which no one else has. The primary school teachers of the world know enough about the growth of mind, if their knowledge could be combined and systematized, to add a chapter to mental science more valuable than anything this century has contributed. And I am strongly of the opinion that what teaching now needs more than anything else is a few lessons from psychology—a profound and true psychology, not this gross materialistic stuff that now usurps the name. The Germans have made a beginning in what they call pedagogy—the philosophy of teaching. It cannot be claimed for this new science that it has not passed beyond the experimental stage as yet. It has not established beyond question any principles of education. But the questions upon which it is at work are such as these: what is the natural order of studies are adapted to the successive ages of children and youth? Under what condition is the memoriter or rote system to be followed? Should the study of numbers or of forms precede? Should a foreign language be learned as the mother tongue is learned, or in a different way? The hopeful thing in the outlook for this science is that its students and writers are largely practical teachers—not mere theorists. The shallow and false notions on these points, based on a false psychology, which have vitiated much of our teaching for the last generation, were imposed on us teachers by wiseacres from outside, educators, as they called themselves, not teachers. These men gained great prominence in institutes and conventions twenty or thirty years ago, and have left us a legacy of un-wisdom in a false philosophy of education. One of its tenets was that a pupil should be required thoroughly to understand everything that he learned. Plausible, but, as a universal principal, utterly unphilosophical. Every pupil should be required thoroughly to understand every thing that he ought to understand—but every primary teacher knows that there are many things which are to be learned now in the age for learning, and understood by-and-by when the age for understanding comes. But I have said enough to show that a good teacher must know how to deal with mind; must be an interested student of his pupil's minds; must know how to stimulate curiosity, how to gain and keep attention, how to rouse ambition, how to keep the mind occupied enough to be interested, but not enough to be wearied; how to make variation of work restful; how to cultivate a taste for good things; in short, the teacher, in order to any creditable proficiency in the work he has undertaken, must be an adept in that profoundest of silences in which many a famous philosopher is but a sciolist in comparison, in the laws and workings of the human mind.

It seems almost superfluous for me to add now in closing, that the teacher cannot be and do what I have required of him and have much time or energy for anything else—that he must be one wholly devoted to his work as teacher. If it is possible for a preacher and pastor—as some seem to think it is—to do his work well, and besides edit a paper and manage a farm, and write books, it is not possible for a teacher to do so much, and no one ever heard of a prominent teacher who had the arrogance to attempt it. If the teacher does not go home after his day's work too tired to undertake anything serious outside of his duties, he has not done that day's work well. It is enough for one person to be a good teacher; it is impossible to be a good teacher and good at anything else requiring much exertion. So it is an infallible mark of a good teacher that he is absorbed in his work; that he finds abundant occupation, and his chief satisfaction there. Transient

teaching is the bane of our school system; for that means teaching with half a heart, the treasure, the ambition, the interest being elsewhere. The evil is plain; the remedy is hard to find. Young women will teach till they marry; young men till they find their way into their professions. We don't grudge the young women their husbands; we need well-trained young men in all the professions; in the meantime what can we do for the schools? How can we secure for them the service of men and women who put their whole mind and heart into teaching? I know of but one answer. We must hold out larger inducements, we must give higher rewards to those who by devoting time and money to preparation for teaching, show that they have a desire to make teaching their main and permanent work. We must put a premium on professional teaching by the respect we pay it, the rank we accord to it, the emoluments we bestow upon it. It makes one sick to hear that young women can again be employed as teachers at the old wages of a dollar and a quarter per week and board, while the woman who washes for you or cleans your house, gets her dollar a day and board. But it is refreshing to know that the number of schools is increasing in which high salaries are paid for high services. Take this as a fact and a sign—it is both—that school commissioners have more difficulty in finding first-class teachers for well-paid positions than such teachers have to find positions. The moral, teachers, is plain—qualify yourselves for the high positions—be first, not third-rate teachers; and, believe me, the qualifications of the true teacher are such as to justify me in saying to you, in order to be first-class teachers, you must be first-class men and women.

MISCELLANY.

—A member of the Japanese Legation to Europe was observed to stop before one of the London shops devoted to the sale of "Japanese" goods, and remain for some minutes lost in silent contemplation, after which he observed to his companion, "What very extraordinary works of art these Europeans do produce."

—Rose Terry Cook says that literary work is the hardest and poorest paid work there is. "You feel that a clergyman earns a large salary who writes two sermons of perhaps 3,500 words each every week; and I generally write 9,000, and have written as many as 15,000 words in five days, and attended to my house and the needs of an invalid beside; yet I have never made a thousand dollars in any year."

—An "old mother" writes to the *Hartford Times* about married life thus:—"Persevere sacredly the privacies of your own house, your married state, and your hearts. Let no third person come in between you two. With God's help build your own quiet world, not allowing your dearest earthly friend to be the confidant of aught that concerns your domestic peace. Let moments of alienation, if they occur, be healed at once; never speak of it outside, but to each other confess, and all will come out right. Never let the morrow's sun find you at variance. Review and renew your vows; it will do you good, and thereby your souls will grow together, and you will become truly one."

—Professor S—, whose loss it deeply lamented in the scholastic circles of New-York, was at one time a highly valued contributor to the journal of which he afterwards took charge, and being one day introduced to its editor was greeted with every expression of cordiality and respect. It was a great pleasure to meet one whose learning and services had been, etc., etc. "But, Professor," added the editor, turning upon him and seizing his hand with such an earnestness and solemnity in his face, "I hope you pray for my printers!" The Professor replied that he was very happy to offer his prayers in behalf of any who were in need of them; but what was the special urgency this case? "Ah," answered the editor, shaking his head impressively, "if you could hear them swear when they get to work on your manuscript!"

RAPPORT FINANCIER

DES

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ETAT des Recettes et des Dépenses générales du 1er Juillet 1877 au 30 Juin 1878, inclusivement.

RECETTES		\$ cts.	\$ cts.
Argent en mains le 1er juillet 1877			17240 53
Reçu de la Corporation de la cité de Montréal montant de la taxe d'école pour 1877-78	74530 82		
“ de la même a/c taxe 1878-79	9788 68		
	84319 50		
Moins montant reçu par anticipation et entré ea recettes dans le rapport annuel publié le 31 octobre 1877	20526 75		63792 75
Reçu du surintendant de l'instruction publique, octroi annuel en faveur des écoles communes	10127 54		
“ du même en faveur de l'école Polytechnique	3000 00		
“ du même à même fonds de l'éducation supérieure	1380 00		14507 54
“ contributions des élèves pour 1877-78			10548 05
“ sur billets escomptés			20000 00
“ loyers de maisons			221 74
“ produit de la vente de 50,000 de débetures, 3ème émission			49500 00
“ pour livres, etc.			25 44
			\$175836 05
DÉPENSES		\$ cts.	\$ cts.
Payé pour le soutien des écoles (voir cédule A)			61651 07
“ achats d'instruments de physique, de chimie et de dessin, livres, traitements des professeurs et pour le soutien de l'école Polytechnique (voir cédule C)			5360 89
“ mobilier pour les diverses écoles, (voir cédule D)			5490 52
“ pour la construction de bâtisses d'écoles, améliorations aux biens-fonds, ouvertures de nouvelles classes, réparations, etc., (voir cédule E)			62017 63
“ balance—loyer de l'académie St. Joseph			1250 06
“ frais d'administration			4397 10
“ bureau du surintendant, salaire et autres dépenses			2094 55
“ intérêts sur billets et obligations			7658 00
“ fonds d'amortissement sur débetures			6849 48
“ intérêts sur débetures			15502 19
Argent en mains 30 juin 1878			3564 62
			\$175836 05

CÉDULE A

ETAT des paiements pour le soutien des diverses écoles

NOM DES ECOLES	Salaires et octrois	Entretien des classes	Livres de prix	Papeterie et livres de classes	Impres-sions	Chauffage	Eclairage	Taxes et cotisa-tions	Dépenses Générales	Totaux
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1. Académie Commerciale du Plateau.....	9718 79	757 22	68 61	13 44	71 00	398 29	169 45	1536 72	850 02	13578 54
2. Ecole Primaire.....	3700 00	409 31	48 59	7 71	30 00	138 21	10 10	177 80	48 40	4392 51
3. Académie Ste. Marie.....	6190 02	337 89	50 15	13 63	.....	51 08	23 23	260 25	15 40	6859 20
4. " St. Vincent de Paul.....	5560 00	443 67	50 46	21 76	.....	178 35	63 25	187 50	102 72	6680 46
5. " St. Patrice.....	6899 79	400 45	49 71	22 91	.....	204 46	81 70	.....	91 91	7928 43
6. " St. Joseph.....	.....	.....	.....	.....	.....	.....	3 65	291 00	200 00	293 65
7. " St. Antoine.....	5349 99	513 30	51 00	16 55	12 50	301 15	53 95	156 90	232 82	6821 36
8. " St. Denis.....	4520 03	453 45	51 00	32 94	10 50	263 06	37 45	.....	29 11	5564 44
9. " Sacré-Cœur.....	.....	.....	.....	4 00	.....	.....	.....	.....	187 19	191 19
10. Ecole 256, Notre-Dame.....	160 00	.....	.....	.....	.....	.....	.....	.....	.....	160 00
11. " 483, Wellington.....	800 00	.....	.....	.....	.....	.....	.....	.....	.....	800 00
12. " 131, Ste. Marie.....	800 00	.....	.....	.....	.....	.....	.....	.....	.....	800 00
13. " coin Sydenham et Ontario.....	800 00	.....	.....	.....	.....	.....	.....	.....	.....	800 00
14. " coin Visitation et Craig.....	100 00	.....	.....	.....	.....	.....	.....	.....	.....	800 00
15. " coin St. Denis et Mignonne.....	300 00	.....	.....	.....	.....	.....	.....	.....	.....	100 00
16. " des Aveugles.....	400 00	.....	.....	.....	.....	.....	.....	.....	.....	300 00
17. " 964, Ste. Catherine.....	230 00	.....	.....	.....	.....	.....	.....	.....	.....	400 00
18. " 542, Ste. Marie.....	593 99	.....	.....	.....	.....	.....	.....	.....	.....	230 00
19. " 39, St. Antoine.....	400 00	.....	.....	.....	.....	.....	.....	.....	12 99	605 99
20. " coin Cadieux et Roy.....	300 00	.....	.....	.....	.....	.....	.....	.....	4 50	404 50
21. " 312, Logan.....	450 00	.....	.....	.....	.....	.....	.....	.....	.....	380 00
22. " 250, Panet.....	230 00	.....	.....	.....	.....	.....	.....	.....	.....	450 00
23. " 54, St. Dominique.....	548 00	.....	.....	.....	.....	.....	.....	.....	2 50	232 50
24. " 290, Panet.....	300 00	.....	.....	.....	.....	.....	.....	.....	.....	548 00
25. " Avenue Larin.....	400 00	.....	.....	.....	.....	.....	.....	.....	.....	300 00
26. Ecoles rues Ontario et Sexton.....	1400 00	.....	.....	.....	.....	.....	.....	.....	.....	400 00
27. Ecole Ste. Brigide.....	1200 00	.....	.....	.....	.....	.....	.....	.....	30	1400 30
	51350 61	3315 39	369 52	132 94	124 00	1529 60	441 88	2610 17	1776 96	61651 07

CÉDULE B

ETAT indiquant la dépense nette pour le maintien de chaque école

NOM DES ECOLES	DÉPENSES GÉNÉRALES.			RECETTES SPÉCIALES.			Dépenses nettes	Nombre d'élèves	Coût net par élève par année
	Salaires et octrois	Autres dépenses	Dépenses totales	Allocation du Gouver-nement	Reçu des élèves	Recettes totales			
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.		\$ cts.
1. Académie Commerciale du Plateau.....	9718 79	3859 75	13578 54	1380 00	4661 68	6041 68	7536 86	417	21 83
2. Ecole Primaire.....	3700 00	692 51	4392 51	.....	1574 61	1574 61	2817 90		
3. Académie Ste. Marie.....	6190 02	669 18	6859 20	.....	1340 57	1340 57	5518 63		
4. " St. Vincent de Paul.....	5560 00	1120 46	6680 46	.....	384 44	384 44	6296 02	416	13 26
5. " St. Patrice.....	6899 79	1038 64	7938 43	.....	762 60	762 60	7175 83	415	15 17
6. " St. Patrice.....	.....	203 65	203 65	.....	.....	.....	7175 83	405	17 71
7. " St. Antoine.....	5349 99	1471 37	6821 36	.....	.....	.....	203 65	.....	.....
8. " St. Denis.....	4520 03	1034 41	5554 44	.....	1011 64	1011 64	5809 72	383	15 13
9. " Sacré-Cœur.....	.....	191 19	191 19	.....	812 51	812 51	4741 93	335	14 13
10. Ecole 256, Notre-Dame.....	160 00	.....	160 00	.....	.....	.....	191 19	.....	.....
11. " 483, Wellington.....	800 00	.....	800 00	.....	.....	.....	160 00	153	1 04
12. " 131, Ste. Marie.....	800 00	.....	800 00	.....	.....	.....	800 00	382	2 21
13. " coin Sydenham et Ontario.....	800 00	.....	800 00	.....	.....	.....	800 00	289	2 77
14. " coin Visitation et Craig.....	100 00	.....	100 00	.....	.....	.....	800 00	795	1 01
15. " coin St. Denis et Mignonne.....	300 00	.....	300 00	.....	.....	.....	100 00	507	0 20
16. " des Aveugles.....	400 00	.....	400 00	.....	.....	.....	300 00	115	2 61
17. " Ste. Catherine.....	230 00	.....	230 00	.....	.....	.....	400 00	50	8 00
18. " 542, Ste. Marie.....	593 99	12 00	605 99	.....	.....	.....	230 00	60	3 50
19. " 39, St. Antoine.....	400 00	4 50	404 50	.....	.....	.....	605 99	200	3 03
20. " coin Cadieux et Roy.....	300 00	.....	300 00	.....	.....	.....	404 50	79	5 12
21. " 312, Logan.....	450 00	.....	450 00	.....	.....	.....	300 00	193	1 55
22. " 250, Panet.....	230 00	2 50	232 50	.....	.....	.....	450 00	121	3 72
23. " 54, St. Dominique.....	548 00	.....	548 00	.....	.....	.....	232 50	86	2 70
24. " 290, Panet.....	300 00	.....	300 00	.....	.....	.....	548 00	309	1 80
25. " Avenue Larin.....	400 00	.....	400 00	.....	.....	.....	300 00	282	1 14
26. Ecoles rues Ontario et Sexton.....	1400 00	30	1400 30	.....	.....	.....	400 00	257	1 55
27. Ecole Ste. Brigide.....	1200 00	.....	1200 00	.....	.....	.....	1400 30	583	2 38
	51350 61	10300 46	61651 07	1380 00	10548 05	11928 05	49723 02	7298	2 40

CÉDULE C

ETAT des paiements pour le maintien de l'école Polytechnique

	\$ cts.	\$ cts.
Salaires des Professeurs		4299 85
Dépenses	2 05	
Réparations	1 05	
Mobilier	3 20	
Eclairage	11 05	
Entretien des classes	428 35	
Impressions	26 25	
Assurance	36 99	
Chauffage	50 64	580 78
Collection Conchologique		10 00
Cabinet de Physique		49 72
Laboratoire de Chimie		36 58
Collection Minéralogique		35 49
Bibliothèque		53 94
Collection Ornithologique		2 50
" bois canadien		12 03
Instruments de Physique et de Chimie commandés non encore reçus		300 00
Avoir :		5360 89
Reçu du Gouvernement	3000 00	
" des élèves	143 01	
		3143 01
		2217 88

CÉDULE D

ETAT des paiements faits pour achat de mobilier pour les diverses Ecoles

	\$ cts.
Académie Commerciale du Plateau	467 73
Ecole Primaire	2 50
Académie Ste. Marie	10 20
" St. Vincent de Paul	141 08
" St. Patrice	14 85
Ecole coin Cadieux et Roy	7 80
" 256, rue Notre-Dame	21 10
" 483, rue Wellington	33 60
Académie St. Denis	1564 67
" St. Antoine	1917 79
" du Sacré-Cœur	1196 40
Ecole 54 rue St. Dominique	26 49
Bureau	86 40
	5490 52

CEDULE E

ETAT des paiements faits pour les bâtisses d'Ecoles, améliorations aux biens-fonds, ouvertures de nouvelles classes, réparations, etc., etc.

NOM DES ECOLES.	Bâtisses	Terrains.	Réparations.	Totaux.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Académie Commerciale	1010 87	120 00	837 79	1968 66
Ecole Primaire		62 50	6 00	88 50
Académie Ste. Marie			146 10	146 10
" St. Vincent de Paul	76 20	38 00	9 90	124 10
" St. Patrice		81 00	85 28	169 28
" St. Joseph			19 50	19 50
" St. Denis	12987 61	2951 72	5 32	15944 65
" St. Antoine	16432 43	2257 15	63 41	18752 99
" Sacré-Cœur	21049 48	3544 06		24593 54
Propriété Quarré Richmond		178 35		178 35
Maisons Rue St. Urbain			31 96	31 96
	51536 59	9255 78	1205 26	62017 63

CÉDULE F—ETAT indiquant le nombre des professeurs et des élèves dans chaque école

NOM DES ECOLES	Nombre de professeurs	Nombre d'élèves	SEXE
Académie Commerciale du Plateau.....	19	417	Garçons
Ecole Primaire.....	8	416	
Académie Ste. Marie.....	8	415	
“ St. Vincent de Paul.....	8	405	
“ St. Patrice.....	8	383	
“ St. Antoine.....	7	335	Filles
“ St. Denis.....	4	153	
Ecole 256 Notre-Dame.....	5	363	
“ 483 rue Wellington.....	5	289	
“ 131 rue Ste Marie.....	11	795	
“ coin des rues Sydenham et Ontario.....	9	507	
“ “ “ Visitation et Craig.....	3	115	
“ “ “ St. Denis et Mignonne.....	6	50	
“ des Aveugles.....	2	66	
“ 964 rue Ste. Catherine.....	4	200		Garçons et Filles aveugles
“ rue Ste. Marie.....	4	79	Garçons et Filles
“ 39 St. Antoine.....	4	79	“
“ coin des rues Cadieux et Roy.....	5	193	Filles
“ 312 rue Logan.....	2	121	Garçons et Filles
“ 250 rue Panet.....	1	86	“
“ 54 rue St. Dominique.....	8	309	“
“ 200 rue Panet.....	3	262	Filles
“ Avenue Larin.....	3	257	Garçons et Filles
Ecoles rues Ontario et Seaton.....	6	583	Garçons
Ecole Ste. Brigide.....	8	500	“
	147	7298	

CÉDULE G—ETAT des Récentes et des Dépenses ordinaires

RECETTES	\$ cts.	\$ cts.	DÉPENSES	\$ cts.	\$ cts.
Reçu de la Corporation de Montréal.....		74,530 82	Payé salaires et octrois.....	51,350 61	
“ du gouvernement pour les écoles Communes.....	10,127 54		“ entretien des classes.....	3,315 39	
“ du même pour l'école Polytechnique.....	3,000 00		“ livres de prix.....	369 52	
“ du même par l'Académie Commer- ciale.....	1,380 00	14,507 54	“ papeterie et livres de classes.....	132 94	
“ contributions des élèves.....		10,548 05	“ impressions.....	124 00	
“ loyers de maisons.....		221 74	“ chauffage.....	1,529 60	
			“ éclairage.....	441 88	
			“ dépenses générales.....	1,776 96	
			“ taxes et cotisations.....	2,610 77	
			“ maintien de l'école Polytechnique.....	5,060 89	
			“ réparations.....	1,205 26	
			“ frais d'administration.....	4,397 10	
			“ bureau du Surintendant.....	2,094 55	
			“ Intérêt sur débentures et obligations.....	23,160 19	
			Balance.....		97,569 06
		99,808 15			2,238 09
					99,808 15

CÉDULE H—ÉTAT de l'Actif et du Passif le 1er juillet 1878

ACTIF	\$ cts.	\$ cts.	PASSIF.	\$ cts.	\$ cts.
Bâtisses.....		318494 09	Débentures.....	300000 00	
Terrains.....		196998 63	Obligations hypothécaires.....	80000 00	
Mobilier.....		42976 97	Droits seigneuriaux.....	3700 00	
Bibliothèques.....		5031 99	Baillleurs de fonds.....	39955 17	
Livres en magasin.....		2309 84	Capital des prix d'honneur.....	3600 00	
Fonds d'amortissement.....	29656 88		Billets payables.....	22750 00	
Intérêts sur do.....	6639 28		Dû à la Corporation de Montréal, avance sur taxes 1878-79.....	9788 68	
		36296 16			459793 85
Obligation.....		400 61	Excédant de l'ACTIF sur le PASSIF.....		145179 06
Argent en mains.....		3564 62			604972 91
		604972 91			

Je certifie avoir examiné les livres de comptes tenus par les Commissaires d'Ecoles Catholiques Romains de la cité de Montréal, et je déclare que toutes les entrées contenues dans le rapport financier qui précède sont tirées des dits livres (lesquels livres j'ai comparés ensemble et trouvés corrects).

J'ai de plus comparé et examiné attentivement et en détail toutes les dites entrées d'argent payé avec les pièces justificatives à leur appui et j'ai trouvé le tout correct.

Montréal, 31 octobre 1878.

ED. FOURNIER, Auditeur.

ADVERTISEMENTS.

Wanted.

Mr. John R. Lloyd, Teacher, of the Mountain School, Bergerville, Quebec Co., will be open to an engagement in July. Mr. Lloyd has an Elementary Diploma from the McGill Normal and twenty years experience. Very satisfactory references can be given.

THE JOURNAL OF EDUCATION.

(FOR THE PROVINCE OF QUEBEC.)

The Journal of Education.—published under the direction of the Hon. the Superintendent of Public Instruction and Edited by H. H. MILES, Esq. LL. D., D. C. L. and G. W. COLFER, Esq.,—offers an advantageous medium for advertising on matters appertaining exclusively to Education or the Arts and Sciences.

TERMS: Subscription per annum \$1.00 for those not entitled to receive the Journal free.

Advertising.—One insertion, 8 lines or less \$1.00, over 8 lines, 10 cents per line; Standing advertisements at reduced charges, according to circumstances, but not less than \$10 per annum.

Public School Teachers advertising for situations, free. School Boards, &c., free.

All communications relating to the Journal to be addressed to the Editors.

McGill College Observatory.

Rain and snow Fall during 1878.

MONTH.	Inches of rain.	No. of days on which rain fell.	Inches of snow.	No. of days on which snow fell.	Inches of rain and snow melted.	No. of days on which rain and snow fell.
January.....	0.40	5	30.5	18	3.35	20
February.....	0.28	3	10.2	12	1.28	13
March.....	0.58	8	19.4	14	2.41	18
April.....	3.55	19	2.3	2	3.78	19
May.....	4.11	18	1.0	2	4.21	18
June.....	1.18	14	0	0	1.18	14
July.....	5.47	14	0	0	5.47	14
August.....	3.95	22	0	0	3.95	22
September.....	1.59	11	0	0	1.59	11
October.....	5.39	19	0.1	2	5.40	19
November.....	3.47	16	14.6	12	4.93	24
December.....	2.70	4	32.8	24	5.40	26

Total rain fall during the year was 32.67 inches.
 Total snow fall during the year was 110.9 inches.
 Total rain and snow melted was 43.49 inches.
 Total number of days on which rain fell, 153.
 Total number of days on which snow fell 86.
 Total number of days on which rain or snow fell 218.
 Total number of days on which rain and snow fell 21.

METEOROLOGICAL ABSTRACT FOR THE YEAR 1878.

Monthly Results Derived from Tri-Hourly Observations Taken at McGill College Observations, Height Above Sea Level, 187 Feet.

MONTH.	THERMOMETER.			BAROMETER.			WIND.			Mean relative humidity.....	Mean pressure of vapor.....	Mean velocity in m. per h.	S k y clouded per cent.....	Rain and snow melted.....
	Mean.	Max.	Min.	Range.	Mean.	Max.	Min.	Range.	Mean direction					
January.....	13.12	41.9	-17.8	59.7	30.0489	30.681	29.239	1.442	W. N. W.	11.04	70	3.35		
February.....	22.06	45.0	-2.0	41.0	29.9734	30.344	29.634	0.710	W. N. W.	15.12	57	1.28		
March.....	31.67	52.0	0.1	51.9	29.9506	30.656	29.244	1.412	W. N. W.	11.39	64	2.41		
April.....	48.10	73.0	31.3	51.7	29.8259	30.233	29.268	0.965	N. E.	10.00	80	3.78		
May.....	55.41	75.6	34.8	40.8	29.8678	30.239	29.484	0.755	W.	9.71	68	4.21		
June.....	63.69	90.7	40.0	50.7	29.8755	30.260	28.617	0.643	W. S. W.	9.00	56	1.18		
July.....	72.60	91.8	54.2	37.6	29.8951	30.229	29.345	0.884	W.	8.62	57	5.47		
August.....	68.67	82.0	54.1	27.9	29.8269	30.144	29.381	0.763	S. W.	8.36	58	3.95		
September.....	62.59	84.0	40.3	43.7	30.0562	30.521	29.534	0.987	S. S. W.	9.07	54	1.59		
October.....	50.91	74.2	27.8	46.4	29.9389	30.410	29.441	0.969	S. S. W.	11.20	58	5.40		
November.....	33.15	45.4	18.5	26.9	29.8688	30.496	28.931	1.525	.....	12.29	88	4.93	
December.....	31.35	47.3	-1.2	46.5	29.8684	30.535	28.844	1.691	W. N. W.	12.73	81	5.94		
Means.....	45.278	66.91	23.34	43.57	29.91637	30.535	28.844	1.0622	.....	10.877	65.9		

* Barometer readings reduced to sea level, and to temperature of 32° Fahrenheit. † Pressure of vapor in inches of mercury. ‡ Humidity relative, saturation 100. § Observed.
 Greatest heat was 91.8, on July 2nd; greatest cold was -17.8, on January 8th—giving a range of temperature for the year of 109.6 degrees, Greatest range of the thermometer in one month was 59.7 in January. The warmest day was July 2nd, the mean being 84.34. The coldest day was January 7th—men temperature, -11.47. Highest barometer reading was 30.681, on January 8th; lowest was 28.845, on December 11th., giving a range for the year of 1.837 inches. Least relative humidity was 28 on July 5th.
 Greatest mileage of wind in one hour, during the year, was 50, on January 23rd, when the maximum velocity was at the rate of 60 miles per hour. Mean direction of the wind, west.

ABSTRACT FOR THE MONTH OF DECEMBER, 1878.

OF TRI-HOURLY METEOROLOGICAL OBSERVATIONS TAKEN AT MCGILL COLLEGE OBSERVATORY, HEIGHT ABOVE SEA LEVEL, 187 FEET.

Day.	THERMOMETER.				BAROMETER.				+ Mean pressure of vapor	† Mean relative humidity.	WIND.		SKY CLOUDED IN TENTHS.			Rain and snow melted.	Day.
	Mean.	Max.	Min.	Range	Mean.	‡ Max.	‡ Min.	Range			General direction.	Mean velocity in m. p. hour.	Mean	Max	Min.		
Sunday 1	.....	32.0	23.2	8.8	.....	.....	.....	.....	.....	.....	N.	4.2	.....	.....	.....	.....	1 Sunday
2	33.15	39.4	23.3	16.1	29.8045	30.263	29.446	.817	.1711	88.9	S. W.	9.2	9.7	10	4	0.57	2
3	36.27	39.7	31.1	8.6	29.4641	29.573	29.387	.185	.1912	92.1	W.	20.2	10.0	10	10	0.08	3
4	29.19	33.2	25.3	7.9	29.5805	29.615	29.544	.071	.1434	88.3	N.	10.3	10.0	10	10	0.04	4
5	25.74	34.0	22.1	11.9	29.6402	29.692	29.610	.082	.1115	80.3	N. W.	12.6	10.0	10	10	Inapp.	5
6	19.26	23.5	15.3	8.2	29.7835	29.916	29.690	.225	.0769	73.6	W.	17.0	9.9	10	9	Inapp.	6
7	19.97	23.0	17.1	5.9	30.0429	30.138	29.957	.182	.0814	78.2	N. W.	8.4	9.6	10	4	0.06	7
Sunday 8	.....	26.0	13.7	12.3	.....	.....	.....	.....	.....	.....	W.	8.5	.....	.....	.....	.....	8 Sunday
9	22.41	26.9	15.6	11.3	30.1155	30.336	29.856	.480	.1036	85.0	E.	8.6	9.2	10	4	0.07	9
10	33.70	39.1	25.7	13.4	29.3665	29.780	28.868	.912	.1870	95.7	N. E.	16.5	10.0	10	10	2.20	10
11	32.91	47.3	22.6	24.7	29.2601	29.773	28.844	.929	.1749	87.2	.....	21.3	10.0	10	10	0.02	11
12	22.09	26.0	19.5	6.5	30.0561	30.210	29.865	.345	.0880	74.1	.....	15.8	6.5	10	2	Inapp.	12
13	22.34	26.2	18.6	7.6	30.2694	30.301	30.230	.071	.0880	73.5	N. W.	13.2	7.7	10	0	.....	13
14	19.61	23.0	15.6	7.4	30.2154	30.309	30.023	.285	.0789	74.7	N. E.	8.3	9.9	10	9	0.01	14
Sunday 15	.....	24.9	7.7	17.2	.....	.....	.....	.....	.....	.....	N. W.	12.7	.....	.....	.....	0.30	15 Sunday
16	12.42	16.1	9.2	6.9	30.0192	30.128	29.916	.212	.0606	78.6	W.	14.1	7.9	10	3	Inapp.	16
17	19.77	27.0	12.1	14.9	30.0752	30.135	29.987	.148	.0829	79.0	W.	13.7	8.9	10	4	Inapp.	17
18	17.76	27.8	12.3	15.5	29.9736	30.036	29.952	.084	.0720	73.7	W.	17.6	4.7	10	1	.....	18
19	10.49	16.0	5.7	10.3	30.2410	30.286	30.089	.197	.0451	65.1	W.	19.5	0.6	2	0	.....	19
20	20.64	25.8	9.4	16.4	30.2400	30.283	30.205	.078	.0881	79.1	W.	13.8	9.7	10	8	Inapp.	20
21	22.70	25.6	18.7	6.9	29.9662	30.207	29.428	.779	.1039	85.5	S.	11.1	10.0	10	10	1.24	21
Sunday 22	.....	26.0	12.7	13.3	.....	.....	.....	.....	.....	.....	.....	21.4	.....	.....	.....	0.67	22 Sunday
23	14.57	22.1	9.5	12.6	29.6170	29.654	29.552	.102	.0631	75.2	S. W.	18.1	4.0	10	0	Inapp.	23
24	13.35	16.2	8.6	7.6	29.5215	29.617	29.453	.164	.0651	81.4	S. W.	18.7	8.7	10	4	0.34	24
X'mas 25	.....	20.3	7.4	12.9	.....	.....	.....	.....	.....	.....	W.	20.0	.....	.....	.....	Inapp.	25 X'mas
26	22.59	27.9	14.5	13.4	29.5685	29.733	29.461	.272	.0984	78.9	W.	21.4	6.4	10	0	0.12	26
27	16.15	20.8	9.5	12.3	29.6864	29.767	29.632	.135	.0761	82.9	N. W.	6.6	8.7	10	0	Inapp.	27
28	12.66	18.8	5.7	13.2	30.0137	30.157	29.839	.320	.0560	73.6	W.	12.9	7.1	10	0	0.01	28
Sunday 29	.....	17.5	-1.2	18.7	.....	.....	.....	.....	.....	.....	S. W.	8.3	.....	.....	.....	0.09	29 Sunday
30	17.27	25.3	9.7	15.6	30.0106	30.136	29.934	.202	.0826	84.0	S. W.	12.8	5.6	10	0	0.17	30
-	18.72	22.3	10.6	11.7	30.1795	30.228	30.123	.105	.0809	78.4	W.	8.7	8.7	10	0	Inapp.	31
Means.....	21.350	26.44	14.54	11.90	.....	.....	.....	.2953	.09889	80.29	.....	13.73	8.14	.....	.....	.....	.....

* Barometer readings reduced to sea-level and temperature of 32o Fahr. † Pressure of vapor in inches mercury. ‡ Humidity relative, saturation being 100. § Observed.
 Mean temperature of month, 21.35. Mean of max. and min. temperatures, 20.49. Greatest heat was 47.3 on the 11th; greatest cold was 1.2 below zero on the 29th,—giving a range of temperature for the month of 48.5 degrees. Greatest range of the thermometer in one day was 24.7 on the 11th; least range was 5.9 degrees on the 7th. Mean range for the month was 11.9 degrees. Mean height of the barometer was 29.8684. Highest reading was 30.536 on the 1st; lowest reading was 28.844 on the 11th; giving a range of 1.691 in. Mean elastic force of vapor in the atmosphere was equal to .09889 in. of mercury. Mean relative humidity was 80.28. Maximum relative humidity was 100 on the 10th. Minimum relative humidity was 49 on the 19th. Mean velocity of the wind was 13.73 miles per hour; greatest mileage in one hour was 34 on the 11th. Greatest velocity in gusts was at the rate of 38 miles per hour. Mean direction of the wind, W. N. W. Mean of sky clouded, 81 per cent.
 Rain fell on 4 days. Snow fell on 24 days. Rain or snow fell on 26 days. Total rainfall was 2.70 inches. Total snow fall was 32.8 in. Total precipitation in inches of water 5.91.