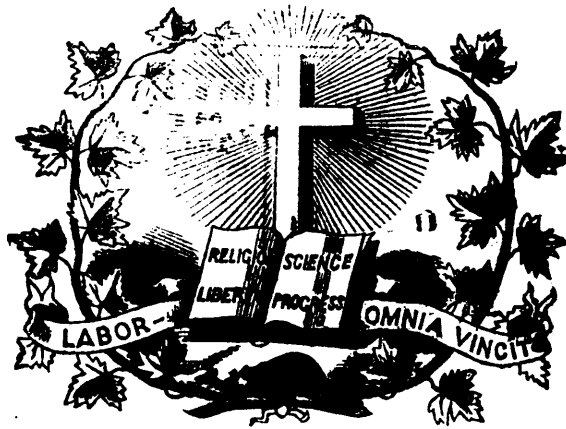


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## TABLE OF CONTENTS.

Study of Greek and Latin Classics.....	65	Copy Minutes of Proceedings of a Meeting of the Protestant Committee of the Council of Public Instruction.....	90
Physiography.....	70	University School Examination.....	92
Address of the President of the Provincial Association of Protestant Teachers—Hobart Butler, Esq.....	72	<b>MISCELLANY :</b>	
Education of the Voice.....	75	Varieties—Tardiness—Cheerfulness—Wrong End First—Educational Talk—Compensation and Capacity—The Teaching of History in Schools—A new nautical instrument—Les Peuples Etranges—Signally by Sunlight—Gare of Children's Eyes—Night Lamps—Too much Sleep—Botanical Notes.....	93
Lighting the School-Room... The Great Pyramid.....	76	eorology.....	95
Etymology—Its Uses and Abuses.....	77		
International Communication by Language.....	83		
The Colleges of the United States.....	88		
<b>POETRY :</b>			
The Old School Book.....	90		
<b>OFFICIAL NOTICES :</b>			
Appointment—Erections, &c., School Commissioner	90		

### Study of the Greek and Latin Classics

CHARLES ELLIOT, D. D.

The tendency in the minds of some to exalt the present by depreciating the past, has led to false views on many subjects. Among these may be included the study of the Ancient Classics. Carried away by some favorite pursuit, enthusiasts have advocated their removal from the course of a liberal education, and the substitution of some department of science which they conceive to be more in accordance with the advancement and spirit of the age. Others have found in them lessons dangerous to morality, and have expressed themselves as though they dreaded, from their use, the return of the ancient polytheism. Others, again, who look at the useful, have urged that their study has no tendency to fit a man for the practical duties of life; and have advocated not only the exclusion of the Greek and Latin Classics from a course of mental training, but every thing else, which does not have a direct practical bearing. *Practical* with such men, means the conversion of every thing that they touch into gold; and because the Greek and Roman Classics do not point the way to wealth, they are doomed to oblivion.

These objections operate on many minds in the community, and damp the ardor of pursuit which many a generous youth would manifest, were he fully satisfied in regard to their utility.

The question of the utility of any branch of study depends upon the decision of the questions, What is the object of education? and by what means is that object effected? If it be true that language lies at the basis of intellectual culture, it will be granted by every one not under the influence of prejudice, that the Latin and Greek have as just a claim as any other to be employed for the discipline of the mind in the department of philology.

It is not irrelevant, therefore, to inquire, at the beginning of our discussion, into the nature and object of education.

The word education is of Latin origin. The verb from which it is derived signifies, in that language, *to foster, maintain, bring up, nurture; hence, to instruct, train, form.*\* We use the term in the secondary sense of instructing, training, forming. The word instruction is generally used to signify the imparting of knowledge, which is only a condition and means of education. The latter consists in training, forming. It is the harmonious development of the intellectual, moral, and physical powers of man. Its end is to fit him for the performance of the duties arising out of his various relations, to perfect his whole being.

The mention of man as an intellectual, moral, and physical being, presents to us a complex idea; and we can have no adequate conception of what education ought to be, unless we have some correct apprehension of that complex creature. What, then, is man, his constitution, his relations, and destiny?

Man is composed of soul and body. By means of his soul he is allied to the world of spirits; by means of his body, to the world of matter. The mind is endowed with faculties, which, in their exercise, obey certain laws: the body possesses functions, some of which perform the parts allotted to them without any volition

\* It is a mistake to derive the word education, as many do, from *educō, educere*, of the third conjugation. It comes from *educō, educare*, at the first.

on our part; others follow the dictates of the immaterial principle.

Without strict regard to metaphysical analysis, the faculties of the mind may be divided into the intellectual and moral faculties, and the faculty of taste. By the first, we apprehend the abstract relations of things, and the truth or falsehood of propositions; by the second, we discern the moral quality of actions, and derive the feeling of obligation; by the third, we appreciate the beauty and sublimity of art and of the material world. The body is the mere instrument of perception and action, while, at the same time, it forms the habitation of the spirit.

But our idea of man must be very defective, if we view him in an isolated capacity only, and contemplate his faculties and high endowments without reference to the great spiritual system of which he forms a part. As a member of such a system, he is a subject of moral law administered by the Legislator of the Universe. This law does not view him as an *autoteles*—a being whose end is himself—but as a being whose chief end is to glorify his Creator by the highest cultivation and active employment of those mental and moral faculties with which he is so munificently endowed. It ought not to be his aim to secure the greatest happiness and wealth possible for the present term of existence, but to fit himself for that world of which this forms but the vestibule. This is his high destiny. In order to accomplish this destiny, things must not be estimated according to their present importance, but according to their influence on his future well-being. The question, in regard to any pursuit, should be, How will it best promote that well-being?—not, How will it advance him in wealth? Thus things would assume their proper positions and due relations.

The subject, then, to be educated, is a being of wide relations, and of a destiny high as the glory of the Highest. Education is the instrument by which this being is fitted for the performance of the duties arising out of his relations, and assimilated, in some degree, to his high-born and fair original.

But of education there are two kinds. The one is the education of habits and particular faculties; the other, the development of the whole man. The former has reference to some professional calling, and is mistaken by many for true education. So far is this from the truth, as a profound philologist has well remarked, the more a man is educated professionally, the less is he educated as a man. Unacquainted with almost every branch of study not immediately connected with his profession, the furniture of his mind is incomplete. It resembles a room with a beautiful finish and costly paintings on one wall, and with nothing but raw plaster on the other. The mental development of such a man has no harmony, no symmetry of parts.

True education, in its largest sense, is the development of the whole man, physical, intellectual, and moral. It does not consist in Spartan exercises to fit one for successful rivalry in field-games and for high achievements in battle. It does not consist in training the memory at the expense of the judgment, nor in cultivating the esthetic part of our nature to the neglect of the intellectual; nor does it admit of developing the intellect without an attempt at a corresponding development of the moral powers; but it consists in the training and culture of all these, in presenting in one glow of associated beauty all the faculties of body and soul.

In this development education can employ no one instrument. There must be a system of means based upon a correct and philosophical view of the work to be performed. This work, in mental culture, is to teach

the mind how to use its faculties, how to reason correctly on any subject proposed for its consideration.

The method of the mind in reasoning is twofold, analysis and synthesis, or induction and deduction. The relations out of which all science is made up are also twofold—law and observation. A law is a rule of unconditional truth arrived at by the generalization of facts. These facts become matters of knowledge by observation.

“When we reason from the facts to the law, we call it analysis, or induction; when we reason from law to law, when from a known truth we seek to establish an unknown truth, we call it deduction, or synthesis. As, then, all science is made up of law and observation, of the idea and the facts, so all scientific reasoning is either induction or deduction. It is not possible, however, to teach inductive reasoning, or even to cultivate a habit of it directly. We all reason inductively every moment of our lives, but to reason inductively for the purposes of science belongs only to those whose minds are so constituted that they can see the resemblances in things which other men think unlike: in short, to those who have powers of original combination, and whom we term men of genius. If, therefore, we can impart by teaching deductive habits, education will have done its utmost towards the discipline of the reasoning faculties. When we speak of laws and ideas, we must not be understood as wishing to imply any thing more than general terms arrived at by real classification. About these general terms and these alone is deductive reason conversant, so that the method of mind, which is the object of education, is nothing but the method of language. Hence, if there is any way of imparting to the mind deductive habits, it must be by teaching the method of language, and this discipline has in fact been adopted in all the more enlightened periods of the existence of man. It will be remembered, in this method of language, it is not the words, but the arrangement of them, which is the object of study, and thus the method of language is independent of the conventional significations of particular words: it is of no country and of no age, but is as universal as the general mind of man. For these reasons we assert that the method of language, one of the branches of philology, must always be, as it has been, the basis of education, or humanity as such, that is, of the discipline of the human mind.”\*

Language, moreover, is the instrument of thought: it forms the medium of communication between one mind and another; it is important, then, that the instrument be skilfully handled, that the medium be clear and unobstructed as possible. But this can only be accomplished by a careful study of the nature and powers of the instrument itself.

All this may be admitted, and still it may be asked, What bearing has it upon the study of the Latin and Greek Classics? Why may not a modern language, such as the English, the German, or the French, accomplish all the ends of philological training?

A dead language the phenomena of which are fixed, has a decided advantage over a living one, which is subject to perpetual change. Its permanence of form affords us better opportunities for philological anatomy and for gaining fixed ideas of the general analogy of language. Of all dead languages, the Latin and the Greek, with the exception, perhaps, of the Sanscrit, have attained to the greatest perfection of grammatical structure, and to the highest degree of literary culture. No dead language possesses a literature so rich and

\* Donaldson's New Cratylus, pp. 7, 8, Cambridge.

varied as those of Greece and Rome. These, then, are sufficient reasons for choosing a language, or languages, which we find crystallized in symmetry and beauty, in preference to a living one, which is sometimes advancing, sometimes retrograding; which is modified by local customs, manners, tastes, and habits, and changes its form with the progress or revolution of society.

It will scarcely be asked, why any other dead language, for example the Hebrew, against the literature of which exist no objections, may not be selected as well as the Latin and Greek. Apart from other reasons that might be assigned, the following is sufficient: The cultivated taste of all ages has preferred the Latin and the Greek, just as it has preferred the painting of Appelles and the statuary of Phidias and Praxiteles to the rude designs and clumsy execution of their barbarian neighbors. If any think this statement disparaging to a language which has preserved to us the writings of inspired poets and prophets, let them remember that the Greek was equally honored as the vehicle of apostolic teaching, and that both it and the Latin are as much the gift of God as the language of Moses.

Having shown that the study of philology lies at the basis of intellectual training, that a dead language is preferable for this purpose to a living one, and that among the dead languages the Greek and the Latin have superior claims, it will be necessary to show the particular manner in which the study of the Classics disciplines the mind, and that it can not, with advantage, be superseded by any thing else.

Suppose, then, a student with his Virgil or his Homer before him. What is the task proposed? It is manifestly, in the first place, to arrive at the meaning of his author. In doing this he makes himself acquainted with the significations of particular words. He next so arranges these words, according to their dependence and agreement, as to make a consistent sense. To do this successfully there is required the exercise of various faculties. Memory is employed in remembering the significations of words; comparison is exercised in observing their relations and agreement; and judgment, in applying the principles of grammar. But the exercise does not end here. If the student is faithful, he will cultivate his taste in selecting the happiest and most appropriate expressions of his own language, in which to clothe the sense of the original: he will mark the differences of idiom, make himself acquainted with the geographical and historical facts connected with his subject, and inform himself with regard to every allusion to political, social, and domestic life. The study of the Classics, if properly pursued, is not the mere memorizing of words, declension of nouns, conjugation of verbs, and the application of rules for the agreement and government of words; but it is the exercise of memory, reason, judgment, and taste. In separating sentences into their elementary parts, the mind goes through a process of analysis; in combining these parts according to the principles of syntactical structure, recourse is had to the opposite process of synthesis; and in thoroughly comprehending the subject, contribution is laid on almost every department of human knowledge.

A pertinent illustration of the point under consideration may be derived from the study of the English Classics. To understand Milton, for example, requires not only a thorough knowledge of the English language, but also of mythology, theological opinions, and many other subjects. When he speaks of that

“Crystalline sphere

Whose balance weigh'd the trepidation talk'd,”

he becomes altogether unintelligible to the reader,

unless he have some knowledge of the Ptolemic system of astronomy; and without some acquaintance with the diseases of the eyes, obscurity must rest upon the passage in which, referring to his blindness, he says:

“So thick a drop serene hath quench'd their orbs,  
Or dim suffusion veil'd.”

There is a higher exercise in studying the Ancient Classics than any which has yet been mentioned. In them we have some of the greatest productions of the human mind. The fountains of history, the wells of poesy, the highest efforts of oratory, the most subtle disquisitions of philosophy are there. They require, therefore, the application of logic and criticism. But to analyze the structure of arguments, to trace the affinities of thought, and to apply the principles of taste is the highest walk of mind, and all this a thorough and comprehensive study of the Classics requires. The instances are very rare in which all this is fully done during a collegiate course. The most that we can expect to be accomplished there, is to lay the foundation for higher acquisitions.

The classical languages, as an instrument of intellectual development, can not, with advantage, be superseded by any thing else. No one has advocated the appropriation of more time to the study of the mental and moral sciences as an equivalent; for a proper understanding of these is so closely connected with a thorough knowledge of language that little progress can be made in them without it. The comparative merits of a living and a dead language have already been briefly alluded to: it only remains, therefore, to consider the propriety of substituting a more extended course of Mathematics, or of the Natural Sciences.

Let a more extensive course of Mathematics be substituted. In some respects, as an instrument of education, they are superior to the Classics. They accustom the student to patient attention, concentration of mind, and consecutive thought: they impart a habit of precision and logical deduction to a degree which nothing else can accomplish; but by carrying the pupil into the regions of cold abstraction, they chill the aspirations of fancy and fetter the play of the imagination. The reasoning employed in Mathematics, moreover, is not drawn from such a variety of sources as the reasoning required in the study of languages. The mathematician sets out with a few axioms and definitions, and his whole process consists in deducing ultimate or unknown truths from such as are obvious, or based upon previous demonstration. The principal faculties employed in such a process are memory, comparison, and judgment; and these are confined to a narrow, rigorously bounded field. Within that field they are trained to the eagle's quickness and penetration of vision.

The same may be said of the student of languages, who has his author, grammar, and dictionary. But in conducting their respective processes a great difference will be observed. The mathematician deals only with the relations of number and quantity: the student of languages deals with the signification of words, their relative position in a sentence, the selection of such terms as will best express the idea, with grammar, context, geography, history, and archæology. It will be readily perceived, therefore, that in the study of mathematics; or that, at least, the same faculties will have a wider exercise.

The demonstrative character of mathematical reasoning, which is one of its excellences, has not the happiest influence upon the mind of the mere mathematician, when moral subjects are presented for his consideration.

Accustomed to his incontrovertible axioms, his exact definitions, and infallible conclusions, he looks for the same in moral questions. But they are not to be found; and if he does not turn skeptic, it can not be said that his mathematics saved him. On moral subjects, the student of language, other things being equal, has the advantage. All his reasoning in that department has been of the probable kind; and consequently he is better prepared to appreciate the evidence and reasoning employed in moral subjects.

To those who advocate the substitution of a more extended course of the Natural Sciences for the study of the Ancient Classics, the following considerations are submitted. They cannot accomplish their own purposes, together with those to be accomplished by the study of languages. Their relation to the mind is different; and it is important that every science should be considered in its relation to the mind, before the arrangement best fitted to develop the mental faculties can be determined. All science is in the mind, and its method is the same in every department; but each particular science has objects peculiar to itself, and differs from another, in its relation to the mind, according to the nature of its objects. The objects of Natural Science are the phenomena and laws of the material universe. To observe, collect, experiment upon, and classify these phenomena are the mental acts and processes employed in its pursuit. By such acts and processes inquisitiveness is awakened, the faculty of observation is cultivated, and habits of close attention are formed; but it seems to us that reflective habits are not cultivated to a corresponding degree. Where the external occupies so large a space in the mental vision, the internal must dwindle into comparatively small dimensions.

To form the mind to reflective habits and give it vigor and tone, it is necessary to throw it back upon itself, to observe its ever-varying phenomena, and to analyze its complex operations and emotions. Now these are found objectively in language.

"We find in the internal mechanism of language the exact counterpart of the mental phenomena, which writers on psychology have so carefully collected and classified. We find that structure of human speech is the perfect image or reflex of what we know of the organization of the mind; the same description, the same arrangement of particulars, the same nomenclature would apply to both and we might turn a treatise on the philosophy of mind into one on the philosophy of language by merely supposing that every thing said in the former of the thoughts as subjective, is said again in the latter of the words as objective."

The study of the Natural Sciences can not give the same kind of discipline only; but it can not give the same amount that the study of the Classics can.

These sciences may be taught in two ways, either systematically and in their full extent, or merely in outline and so as to convey some idea of their objects and leading principles. If they are taught in the former way, they are much too laborious as a mental discipline for the general student; if in the latter, they will have very little effect in cultivating the mind. On the contrary in a majority of instances, they will lead to a dissipation of time and talents, unless pursued with other studies that require severer application.

It is not our intention to detract from the merit of the Physical Sciences. They form a noble study, well adapted to enlarge the mind and give it comprehensive views of the system of thing. But it will scarcely be

urged that the study of them can accomplish all their own ends, together with those of the study of language. And here it may be of importance to remark, that the experience of instructors generally has been that those students who have devoted themselves exclusively to the study of the Physical Sciences have made slower progress than those who have combined with them the study of the Classics. The remark has been attributed Prof. Dugald Stewart, of the University of Edinburg, that the most successful students in his department were those who had an accurate knowledge of the Latin and the Greek.

Some may plead the ennobling influence of Natural Science. In every department it displays the wisdom and goodness of the Creator. If studied with a right spirit, this is true. Yet, in Physical Science, the mind deals with matter alone, its properties and laws. In the Classics we can read the lessons of Divine Providence. We can hold communion with the spirits of the mighty dead, stand with Demosthenes on the Bema at the Pnyx, walk the groves of the Academy with the celebrated philosophers of antiquity, follow Cicero into the Senate and listen to his soul-stirring eloquence, and thus form a sympathy with mankind. And this sympathy who would exchange for all the emotions which the beautiful and sublime in nature can produce? In the words of a Latin dramatist:

"*Humani nihil a me alienum puto.*"

The judgment of the most cultivated nations of modern times has been and is still in conformity with the views that have been expressed. The study of the Greek and Roman Classics was introduced into the system of liberal education which was adopted at the restoration of learning in Europe; and the experience of its benefits has secured its continuance. The Classics of Greece and Rome were included, in the schools, colleges, and universities of modern Europe, among those branches of study which they termed the "*humanities*," or "*literæ humaniores*;" and in the Scotch universities the professor of Latin is still styled "Professor of Humanity." This appellation is a proof that the founders of the modern system of education considered the classical writers as the teachers of the civilized world. They form a common bond, which unites the cultivated minds of all nations and ages together.

Some have condemned the study of the Classics on the ground of morality. It is not our purpose to hold them up as models of moral teaching, or to encourage an indiscriminate imitation of the sages of antiquity. Even under the benign, elevating, and sanctifying influences of Christianity, human virtue is too often found of a defective, weak, and stunted growth: how much more may we expect this to have been the case among those "who changed the glory of the incorruptible God into an image made like corruptible man, and to birds, and four-footed beasts, and creeping things!" The only pure morality is found in the pages of inspiration: the only perfect model of virtue in the Founder of Christianity; and next to Him, in example. Yet among some of the ancient heathens there was much that was noble and elevated in character. We meet every where on the classic page with examples of devoted friendship, filial piety, reverence for the gods, unbending fidelity, self-sacrificing patriotism, and magnanimity. These virtues are commended and their opposites condemned. This demonstrates to us the supremacy of conscience and the universality of moral distinctions. It is known by all who have paid any attention to moral science, that a variety of opinions

\* Donaldson's New Cratylus, p. 44, Cambridge.

has existed concerning the theory of conscience—some holding the doctrine that it is a part of our original constitution, and others that it is the result of education. Now, to a careful reader of the Classics nothing is more obvious than the use of terms expressive of moral distinctions—distinctions founded, not upon legislation nor upon established custom, but referring to something absolute and immutable above and beyond man. They perceived these distinctions and felt and obeyed the impulses of conscience, though at variance with the examples of the deities whom they worshiped. Their gods were monsters of wickedness; but vice, armed with their authority, “found in the heart of man a moral instinct to repel her. The continence of Xenocrates was admired by those who celebrated the debaucheries of Jupiter. The chaste Lucretia adored the unchaste Venus.” These examples afford an illustration of the following passage, written by an inspired apostle: For when the Gentiles, which have not the law are a law unto themselves, which show the work of the law written in their hearts.”

The best method of teaching youth morality, is not by arguments, rules, and demonstrations, but by examples, by sentiments that ennoble and elevate the heart. Such examples, we have already stated, are to be found in the Classics. Socrates was patient and forbearing, ardently devoted to the best interests of his fellow-men, according to the light he enjoyed; Xenophon was an example of modesty; and Plato, who acquired the epithet divine, displayed as much humility as many of his philosophic successors. Among the Romans, we have the simple republican manners of Cincinnatus, the unshaken constancy of Fabricius, the self-denying patriotism of Regulus, and the stern virtue of Cato denouncing the luxury and stemming the corruption of his age. These examples come down to us venerable by their antiquity, and on that account more efficacious. The examples of virtue among the moderns are so near to us and so much more familiar, that we are liable to look upon them in connection with their vices. Examples, that are constantly occurring around us, may be equally brilliant; but, like the light of the sun, which immediately surrounds us, they are obscured by floating dust, whereas, if we look to a distance, the particles of dust disappear, and we see, or we imagine that we see, the pure, unadulterated beam. Here, as in natural scenery, “distance lends enchantment to the view.”

From examples it would be interesting to turn to the moral precepts transmitted to us in the Classics—precepts referring to civil, social, and religious duties. But we will omit these for the consideration of a more important point, at least a point of greater practical importance to the present age.

Classical studies furnish an antidote against the materialistic and materializing philosophy of the present day, promoted by a too exclusive devotion to the Natural Sciences, and thus indirectly aid the causes of morality and religion. Certain scientists are loud in their demand for *things* instead of *words*, as if words, and the ideas which they represent, were not things, and the most permanent things. The temples and sphinxes of Egypt are dumb, and leave us in ignorance of the past; but her hieroglyphics speak; her recorded words are the expositors of her antiquities.

This materialistic philosophy sees nothing practical nor useful, except in ores and metals, cubes and squares, gases and imponderable agents. It has a good representative in

“Mammon, the least erected spirit that fell  
From heaven: for even in heaven his looks and thoughts  
Were always downwards bent; admiring more  
The riches of heaven's pavement, trodden gold,  
Than aught divine or holy else, enjoy'd  
In vision beatific.”

And with great skill does the poet make him the leader of the fallen angels to “a hill” from which they “dug out ribs of gold.”

Low utilitarianism is always thinking about digging gold; and it would convert every thing into a spade or pickaxe for that purpose. Such a one-sided and groveling philosophy must be opposed by one more comprehensive, elevated, and spiritual; and one of the best auxiliaries to such a philosophy is a broad classical culture. Men must be taught that whatever awakens noble thoughts and influences the heart for good is useful and practical; that the most necessary branches of knowledge are not, on that account, the most intrinsically valuable. Iron is used in a greater variety of ways than gold: it is more useful, but does not have more intrinsic value. Cotton is more generally used than silk: it is more useful, but it is not more valuable. Charcoal is more in demand than diamonds; but diamonds are more precious. We live in a world in which labor is required to feed and clothe ourselves, and for this purpose acquaintance with certain branches of sciences is necessary; but those branches, though of necessity more generally studied than others, are not higher in the scale of dignity: they are not of more intrinsic value. Arithmetic is not higher than Calculus; Geography than Astronomy; nor chemistry than Metaphysics and Moral Philosophy. House-and-sign painting is not equal in dignity to landscape painting; nor is the study of Botany so elevated a walk of mind as that of language or poetry. Every one, of course, can not be expected to study Latin and Greek, the higher Mathematics and Metaphysics, literary criticism and poetry; but they are not, on that account, to be considered useless and unworthy of the attention of the human mind; and it must not be imagined that other things, that relate more immediately to our present wants, can be substituted for them, and equally accomplish the same ends. This is the fanatical raving of a short-sighted, purblind philosophy, which can see neither beauty nor excellence in any thing that lies beyond the narrow circle that it has marked out for itself. Its views are all directed to some particular result, and with such intensity that it can see nothing else. It is wedded to a single idea, and all other ideas are discarded, out of respect to its favorite one.

The devotees of such a philosophy say, with Bacon, we want fruit: the object of all philosophy is fruit. Bacon did not mean, by fruit, crab-apples alone, nor pears nor peaches alone; but he meant all the rich variety that nature yields. Without figure, he meant all the legitimate results of literary research and intellectual faculties are designed to produce. In the estimation of that philosopher, Bread-and-Butter Sciences, as they are styled by the Germans, are not the only useful sciences. “Man doth not live by bread only.”

*Vivere*

Non esse solum vesci aethere,  
Sed laude virtutisque fructu  
Egregiam satiare mentem.

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### College of Preceptors.

EVENING MEETING. APRIL 23, 1879.

The Chair having been taken by W. Lawson, Esq., the Rev. George Henslow, M. A., gave a lecture, the substance of which is embodied in the following paper:—

#### “PHYSIOGRAPHY AS AN EDUCATIONAL SUBJECT.”

Physiography as an educational subject may be defined as the Principles of Physical Geography practically applied. The word was adapted (from Mineralogy) by Prof. Huxley to this sense, and in explanation of it he observes:—

“I endeavoured to give, in very broad outlines, a view of the ‘place in the nature’ of a particular district of England, the basin of the Thames; and to leave upon the minds of my hearers the impression, that the muddy waters of our metropolitan river, the hills between which it flows and the breezes which blow over it, are not isolated phenomena, to be taken as understood because they are familiar. On the contrary, I endeavoured to show that the application of the plainest and simplest processes of reasoning to any one of these phenomena suffices to show, lying behind it, a cause, which again suggests another; until, step by step, the conviction dawns upon the learner that, to attain to even an elementary conception of what goes on in his parish, he must know something about the universe; that the pebble he kicks aside would not be what it is, and where it is, unless a particular chapter of the earth’s history, finished untold years ago, had been exactly what it was.”\*

Hence, while Physical Geography in the old sense chiefly consisted of an enumeration and description of the facts of nature, Physiography enters into their causes and interactions, encouraging a personal examination and experience at every step; so as to lead up finally to a comprehension of the Kosmos itself. Physical Geography pure and simple is often but little more than a collection of the drybones of Natural Science; Physiography animates them with life. Nevertheless, they are not distinct branches of Natural History, but only differ in degree. In proportion as a teacher imparts facts only, he is communicating if not cramming information into his pupils; but in proportion as he enters into causes and expounds the *rationale* of things, to the same degree does he teach intelligently, and his subject will be *educationally* valuable and worthy of the name of Physiography.

Sir C. Lyell advised a student to read the “Principles of Geology” first, and his manual of Geology afterwards; because, in order to comprehend the facts of Geology, it is necessary to be thoroughly familiar with the operations of all the physical forces of nature in their present activity; so that, by inductive reasoning, the same forces being presumed to have existed throughout all ages of the world, the phenomena of the past can be thus only interpreted by the phenomena of the present.

As Geology is a detailed description of the phenomena of the rocks of the earth, which represent the past history of the world, and as Physical Geography is a detailed description of the existing phenomena of the world; so Physiography, which is to a large extent identical with the principles of Geology, is the link which binds the two together, and, while expounding the causes now at work, furnishes the *rationale* of the past.

One and a principal value of Physiography is the fact that it deals with the every-day phenomena of nature, and thus constantly appeals to the observing powers. This object should ever be in the teacher’s mind; and there will always be found an abundance of phenomena to illustrate its lessons in the neighbourhood of any school. Such, for example, are the effects of running water. Even a rill by the road-side will often beautifully illustrate in miniature all the phenomena of the largest river, producing lilliputian canons or gorges, then wide alluvial plains. It frequently shifts its course, and subdivides as rivers do, and lastly constructs deltas when it reaches a pool. Of course, a real river or a brook will also furnish illustrations on a larger scale of many of the phenomena of running water.

Again, all the phenomena of Meteorology can be easily studied anywhere, the formation and dispersion of clouds of various kinds, of mists and fogs,—their causes to be traced only require patient observation and careful record; while the recorded experience of practical Meteorologists can be tested and corroborated, or locally qualified, as the case may be.

Again, on taking a general view of the neighbouring country, the contour of its surface, the direction of its river valleys, the character of its soils may all form matters of observation, and the causes of each detail entered into; so that, with an active-minded teacher, Physiography *ought* to form one of the most attractive subjects of a school curriculum. As each school will have its own neighbourhood for the basis of the teacher’s instruction, so the pupils should be made to observe all the physical features of the surrounding country, and then taught to construct their own Physical Map of the Parish. The different heights may be ascertained by an aneroid, and indicated by different colours; while the distances may be reduced to any convenient scale from the Ordnance Map. The objects for observation in nature are endless; and to an intelligent teacher hundreds of things will suggest themselves to be utilised for educational purposes, as he may think fit.

Having made these preliminary remarks, I propose illustrating the subject, and showing how Physiography justifies them. Physical Geography will furnish the facts. It is usual to divide the phenomena of the world into three departments—water, land and the atmosphere, while each is again subdivided into several departments. Thus, water may be considered as salt and fresh; fresh water is again divided into springs, rivers, lakes, glaciers, &c., and each of these treated in detail as more or less isolated phenomena. Physiography perpetually asks of the Physical Geographer:—Why does this occur? what is the cause of that? how do you account for this exceptional case? and so on; and then, supplying the answers, we gradually link together the different phenomena, and thus see the complicated interactions of the whole.

Suppose the subject be Springs. The teacher would begin by referring to some well-known spring in the neighbourhood, possibly a surface spring, such as that occurring in the superficial gravels of London; the origin of them being either from rain alone, or by percolation from the river, just as cases in the desert are due to percolation of the Nile, while the subterranean condition of clay below, necessary to retain the water in the water-bearing gravel, must be observed. Then, the corresponding distribution of the dwellings of man may be shewn,—how, until the water companies were established, houses could not be built far north of Russell Square, as the Thames gravel ceases at about that distance; while, in the country, villages are often

\* *Physiography*, by T. H. Huxley, p. vii.

distributed in accordance with the distribution of water-bearing strata.

Artesian wells are now not infrequent; and the conditions requisite for their construction, and why they fail in London and elsewhere, and whether one could or could not be sunk in any special locality, should be illustrated. Again, calcareous and other mineral springs abound in certain places, and call for interpretation. They depend upon the fact that water holding an excess of carbonic acid in solution, derived from the decomposition of organic matter, will dissolve carbonate of lime, and which, whenever it evaporates, leaves an incrustation. (1) Stalactites and tufa will illustrate the fact, and "fur" in a kettle will furnish extra matter for illustration, while the practical application to the uses of hard and soft water might here find a place.

The teacher will thus see how any one subject constantly suggests another akin to it. He should thus bring in collateral matters, often of great practical importance; while the pupil's mind expands proportionately as he begins to see how phenomena perpetually interact and are linked together, though often at first sight quite incongruous.

With regard to rivers, after the pupils have learnt by heart the names, and very likely, though unwisely, the lengths of the chief rivers of the world, they learn the meaning of such terms as river basin, channel, delta, &c.; but little is told in Physical Geography of the work of rivers in excavating their own channels, and their powers of erosion above and below ground, of their powers of irrigation, of the varying phenomena of their flow, &c., all of which can be practically illustrated by some local brook. As an instance of a remarkable but not uncommon phenomenon, take the Churn of Gloucestershire. It arises in seven springs issuing between the limestone Oolite and the Lias clay. This shews the necessity of having a porous water-bearing bed based by an impervious clay bed to retain the water. It then flows with a volume of 11 cubic feet per minute. At one mile it has 73 cub. ft., at 2 mi., 105 cub. ft., at 5½ mi., 320 cub. ft. Hence, as long as it runs over clay, it gathers waters as it flows, and adds then to its general supply. It now leaves the Lias clay, and passes over the limestone, when a considerable portion sinks into the rocks below, so that at 6½ mi. it was only 290 cub. ft., at 9 mi. 45 cub. ft., at 14½ mi. from its source 10 cub. ft., or less than when it started, and only reacquires a volume of 110 cub. ft. at Crickdale, 22 mi. from its source, where it joins the Thames.

The effect of water flowing underground is seen both in the deep wells of the Chalk, where the water penetrating by cracks accumulates in "pockets," as below Trafalgar Square.

In Limestone countries, as Derbyshire, even subterranean rivers abound: the origin of these, with their formation of caverns, must be explained, and their final use as dens for hyænas, bears, lions, and other animals, as well as prehistoric man, may form extra matter of discussion by the teacher *ad libitum*.

With regard to the phenomena of land, the configuration of the country around any particular place must be carefully noted, and a physical map constructed; but more than this is required. It is not enough to observe only that there are rolling downs of chalk in Sussex, limestone hills in Derbyshire, slate mountains

in Wales and Cumberland, basaltic pillars and volcanic pitchstones in islands on west coast of Scotland, &c. The peculiar nature of these rocks may be the respective and immediate causes of the different features of the country respectively; but what is the origin of the chalk, of the limestone, of the slate? Althout we may be dealing with the features of the land, even far in the interior of a continent, yet we must go to the sea for an interpretation for most of them. The sandstones and conglomerates of our rocks, and the fine slates of Wales, are now having their modern successors being formed on our beaches and on the sea-bottom. Denudation is always at work, destroying on the one hand, constructing on the other; while, for an interpretation of chalk and milestone, we find modern chalk is being deposited as a calcareous ooze at the bottom of the Atlantic; while existing coral reefs furnish the interpretation of the limestones near Scarborough, in Derbyshire, and near Plymouth, &c.

In alluding to chalk, we see how life comes into play in producing phenomena for the Physiographer to consider. He also differs from the Physical Geographer in not being content with the bare distribution of animals and plants upon the globe, but ascertains as far as possible the causes of their distribution. In this department, the botany and zoology of a district will furnish many facts of interest or observation; the return of the migratory birds will furnish matter for instruction; the native insects and mammalia, their habits, &c., are an endless source of observation, if only the teacher will set about instructing his pupils how to observe, and profit by their observations.

It will, I think, be unnecessary to proceed further. My object has been to throw out hints as to the value of the subject in respect to its vast comprehensiveness; and when once the mind is turned to this subject, it will be seen what a mine of educational wealth is utterly neglected, as a rule, for the want of teachers to turn it to account. Yet I am convinced Physiography, or the practical study of the natural phenomena in the neighbourhood of a school, is a subject of paramount importance. First, by the accumulation of observed facts; secondly, the study of their interpretation by the physical and vital agencies at work; then, by widening the application of the forces, the pupils will gradually learn how every phenomenon is linked to some other, that again to others, till the vast interaction of all the physical phenomena of the world will then appear before him. What can be the result of this, but a means of strengthening the mind to take large views of things generally. He will see that, just as *interaction* is a wide principle in nature, so also, in his future intercourse with his fellow men, interaction is a common bond of society. Mutual assistance is the key-note to the well-being of that society, just as mutual goodwill and charity is the silver cord which alone can save it from crumbling to pieces.

In conclusion, I will give an illustration of the close interaction of physical phenomena, and of the adaptation of various classes of facts to each other. I will begin with a horse's hoof, and will end with the sun.

Imagine a horse drawing a cart. It draws it by planting its foot firmly on the ground, exerting its muscles, which supply the mechanical force. Whence came that physical force? From the chemical affinities of the food it ate. To derive benefit from the food, its digestive organs must correspond on the one hand to

(1) A simple experiment, of breathing through a tube into a test-tube or small wine-glass of lime-water, will illustrate it. The water instantly becomes milky; if, however, the operator continues to breathe into it, the water again becomes clear.

\* White's *Natural History of Selbourne* and Rev. L. Jenyns' *Observations in Natural History* (Van Voorst) will be found excellent guides for this purpose.



hay and oats, on the other to its teeth which masticated them. But the grass must contain such elements as will be of use to the horse. It cannot acquire these without a suitable soil to furnish lime for the bones, silica for hoofs, &c. But there would have been no soil at all but for the gradual disintegration and decay of the original igneous rocks of the earth, by the means of the mechanical and chemical agencies at work through countless ages of the world. Granting a perfect soil, still the grass could not grow without air and water. Moreover, the air must contain carbonic acid and ammonia. Supposing a large supply of these substances were constantly being manufactured somewhere, they would never reach a particular blade of grass unless air had the property of diffusing gases and moisture through it, so that the necessary supplies became equally distributed throughout the atmosphere. Granting, then, the laws of diffusion of gases and moisture; still, the plant could get no water unless air could imbibe it. But even this is not enough. Grant that air can imbibe it till, it is saturated, and having arrived at that condition of equilibrium, how is the grass to get it out of the air again? We must now admit the law of absorption, but varying with temperature—the higher the temperature the greater the absorbing power; and that a highly charged atmosphere must part with its superabundant moisture as soon as it is cooled. But what should cool it? We must put the air in motion; and we now trace a cause for winds, in their circulation from tropical regions to the temperate. What causes the air to be heated, to expand and rise up, to flow north and south, and so be circulated and carry moisture and ammonia imbibed from the ocean? The final cause is the sun. Hence the sun heats the tropical air. The air imbibes moisture and rises. The wind flow over temperate regions, there it becomes cooled, and the rain falls. The grass grows, the horse eats, and the work is done, and we have to thank the sun for it all!

In connection with the teaching of Physiography, I would strongly recommend the formation of a typical school museum. It should not be a mere heterogeneous collection of "curiosities"; but every specimen should have a distinct use in its bearing upon some natural phenomenon, or in explanation of some of the many physical forces in work. Specimens illustrative of calcareous springs, stalactites, remains of characteristic prehistoric animals and man, local fossils, correctly named and properly arranged, nests and eggs of local birds, local butterflies and other insects. A school herbarium should be formed, with drawings of floral dissections, if possible done by the pupils themselves, a collection of wild fruits dissected out, &c. In fact, to an enterprising zealous teacher, nothing will be impossible in carrying out all that is requisite to render Physiography a most attractive and an intellectual invaluable aid to the ordinary school curriculum.

[At the close of the paper, the lecturer exhibited a number of specimens to illustrate the general character of what he suggests should constitute a school museum.—*e. g.*, calcareous and siliceous stalactites, stalagmites of baryta, malachite and calcite, a bird's nest falsely "petrified" from Matlock, by incrustation of calcified truly petrified (fossil) wood, the grain being entirely replaced by silica. A series of prehistoric implements, bones, and teeth of British extinct mammalia (rhinoceros, hyaena, bear, &c.) He also pointed out how stereoscopic photographs often illustrate remarkable geological and physical features, and recommended the use of the stereoscope as an important adjunct to the teacher's aid.]

*Educational Times.*

**Address of the President of the Provincial Association of Protestant Teachers  
—Hobart Butler Esqr.**

Bedford, 25th October, 1879.

An erroneous impression has unwittingly been made to obtain regarding the state of the common schools in the Townships. They and the school buildings have from individual instances had a radically false appearance thrown around them. Some of our confrères have evidently felt it to be eccentric to give individual pictures of the school system of the Province, forgetful that individual cases do not make general truths, unless in the aggregate they form a large majority; and have made much of particular instances of poverty or neglect of officials in isolated cases, and deduced from them an exaggerated condition applying to the whole school system of the country. It is proposed, therefore, in this paper, to review in part our system, and in the course of it suggest improvements.

We as teachers are supposed to meet for a purpose—to look situations squarely in the face—to make a diagnosis, so to speak, of the ailments of the school, system and find remedies.

Having met with hearty good will so many times, have we accomplished what we ought? Is our school system improving from year to year? Our Common Schools—or—popular education.

An eminent writer has said of our country schools, that, because they place upon an apparent equality all the young of the State, they are not the select schools, the schools of the rich, nor those of the defined, but the schools of all our young of the whole community. The scholars are classed together, learning the same principles; their sports implant a thought of fellowship common, extended, and unselfish, a good will and youthful friendship that produce sterling qualities in the after years of life, as the different individuals sustain their several relations to each other and to their common State. In them class distinctions are unknown, excepting that "he is best who deserves most" by his attainments. The rich and poor boy stand side by side; they alternate in being the recipients of honors and rewards; and they take censures and punishments alike in turn according to their demerits. Educated thus as companions they are better enabled as men to work together for the good of the country. In mixed populations, the children taught together in schools, being the parents of different nationalities, tongues, and creeds into accord upon national matters, as well as upon neighborhood difficulties. The animosities arising from political and religious views are softened by frequent contact of children. The descendants of English, Irish, Scotch, French, German, and American, reading from the same text-book, spelling in the same class, enjoying together the same sports, never know the bitternesses that separated their ancestors; the rich and poor are not taught class distinctions.

It may be claimed that such a system of education is simply advanced democracy. What are we in reality but a democracy? We have no titled aristocracy we require no class education. The distinctions of class exist only in name in the mother country. Royalty has been for some years stepping down to a lower level, (perhaps it should be said rather, rising to a higher plane) recognizing the advanced proposition that true nobility consists in the greater manhood of the man, as illustrated by his capabilities. The sons of royalty are to-day being educated in the same branches, physical and mental, at the side of the common soldier and the sailor.

Why then should any one seriously advocate separate schools for the rich and for the poor, for the noble and the peasant, for the Englishman and for the Dutchman? Ideas of distinctions in education, of class, of nobility, of wealth, are becoming *effete*, in the more enlightened of the countries of the old world, then why engraft them upon a young country undeveloped in all the essentials of individual greatness, a country, which though it has lately asserted its right to a national policy is not yet even in the gristle of nationality, is yet a dependency of a distant land, with no sure prospect of a speedy position among the nations of the earth!

The common schools are a national improvement upon those of a few years since. Legislation has placed them under the control of men entertaining intelligent and progressive ideas as to the wants of the people; and the more advanced enlightenment of the people themselves, and the increase of means have promoted educational efforts and results. In towns and large villages the power to levy taxes to support graded schools has been given the people.

The grade of teachers has been gradually advanced; and hence some of the counties have centres of learning from which annually come numbers of superior elementary teachers. The school buildings are well built and convenient structures, attractive in their surroundings. The genius of the people is apparently tending towards making the school like the family room, and the adjuncts of it like the accustomed comforts of home.

Instruction is afforded in many schools not only in English but also in the elements of Algebra, French, Book-Keeping, vocal music, and in the histories. The thought is happily gaining ground that education consists not only in the practical, but that all the powers of the mind should be given direction in the different kinds of knowledge; that the development of the youthful mind should be promoted by an acquaintance more or less extended with the modern as well as ancient languages. It is narrow-minded to insist upon a scholar's learning that only which will aid him in the limited sphere of a home-life. It is cramping the intellect to confine it to one department, to the rudimentary branches, to allow it to advance only in the direction of the practical. There is neither generosity nor patriotism in such a course. A ploughman, or a blacksmith should be capable of something beyond simply turning a furrow or a horse-shoe. Education should make not one but many "first men" from the ranks of our stonemasons and shoe-makers.

The germs of greatness often first appear, then receive their direction and impetus from our Common Schools. Men become skilled in any department of knowledge in the measure as imagination is unfettered, thought unrestrained.

The co-education of the sexes in mixed schools characteristic of the Common, is regarded by educators as more practical and useful in developing the mental powers and giving tone to the habits.

Classed together, with equal opportunities in mathematics and languages, listening to the truths of science and art in the same lectures, entering into the professions together (prejudices laid aside and intellect the standard of measurement) seems more in accord with nature and design. The proposition should be admitted that true citizenship is not confined—that we rise above the animal in proportion to the development of the intellect beyond the point requisite to obtain the necessities of life. The advocates of a purely practical education in the primary schools ignore the utility of the expansion

of the mind, the unchaining of the imagination, the usefulness of a wide-ranging knowledge based upon capacity, obtained before the practical or technical course begins. Educators condemn hampering the mind. They claim that general should precede special instruction, and the wider the field in which the mental powers play, the stronger becomes the mind. Common Schools are the place of inception and nursery of much great thought. Wealth, therefore, cannot do too much for them.

#### THE QUALIFICATION OF TEACHER.

The standard of qualification is almost annually being raised.

Written are taking the place of oral examinations. The former is tangible, a fact, one of merit; the latter is of fancy—has ever been the means of favoritism, through which the public were the sufferers.

Teaching is becoming a profession really requiring special education as much so as any other of the learned professions. Yet no amount of special training without natural fitness and adaptation can supply our schools with competent instructors. Discipline, that is to say, government, is not the *sine qua non* to good instructors. One central training school, excellent though it is, does not meet the wants of the Protestant population of the Province. There should be a multiplication of training schools. This want can be met in a practicable way.

The *stimuli* to place our schools on an equality with those of like character in other countries are numerous. At the Centennial the school exhibits from Quebec were in no degree creditable to educational advancement. At Paris a wonderful stride is apparent. The inferior grade of our exhibits in 1876 compared with those of the States and Ontario, infused an energy into our people; and this year we have been enabled to carry off medals and honorable mentions. The Philadelphia failure induced the Department of Public Instruction to adopt a system by which annually it could obtain specimens of the daily work of scholars. Daily Exercise Books were furnished the schools, and by their use a complete picture of the labor of the scholars afforded an index of capacity and progress. As an adjunct to the means employed, the book is almost invaluable: the companion of one day's work with another and the work of one pupil with the other, are greater incentives to application than any system of rewards or punishments. Comparative excellence leads ignorance and indifference naturally to compete with it. The *Journal of Public Instruction* distributed one copy to each school district monthly, and the articles briefly reviewed by the teacher; its hints upon instruction; its historical notes; its discussions of school topics; its solutions; its theorization upon abstruse questions; the general adoption into use of the text-books authorized by the Department; writing essays upon familiar topics weekly or monthly; free-hand drawing based as it is upon geometrical principles; readings; the frequent visits of parents and friends of education; the distribution of rewards; all are accessories to a healthy progress in disciplining and in forming the minds of the young. It must be remembered that mind to-day untutored is an exact reproduction of that of our parents, but the methods, facilities, and necessities for instruction are continually changing. The appliances and methods are more numerous. What answered for the parent is insufficient for the child, unless he is never to leave the well worn groove travelled in by his immediate ancestors.

## COMPULSORY ATTENDANCE.

In some countries society will not submit to the indifference and apathy exhibited by many parents; relative to the education of the young. In cases where the parent will put forth no effort, public opinion in statutory form steps in and relieves him of the burden. It pays the cost of the education of the poor, and in many places compels daily attendance at school, and consequently the reception, involuntary, perhaps, of a degree of knowledge. It being in the eye of the law a crime wilfully to remain in ignorance and it holds also that the country should guard itself against ignorance for its own well-being as well as against crime. The dangerous classes in society are the offspring of the ignorant, and they are constantly recruiting their active forces from them. It is safe to go farther and class the leaders of the dangerous classes as the half-educated of our common schools. When compulsory education is necessary the contest is intelligence with ignorance the battling of great forces. The latter usually yields to the former.

Prejudice against education when actively developed resists to extremity; to overcome which legal measures kindly and gently applied is the province of the executors of the law—wielding authority discreetly and humanely. The teacher and parent are intermediate agents in such education.

## OUR ACADEMIES AND HIGH SCHOOLS.

In the past twenty years there has been a falling off in the usefulness of our academies viewed as a unit. There is inadequate government aid extended to them. That support has been gradually diminished till the sum of money given to each has reached a small moiety of what it once was. As a consequence the teachers have less excellence; a less accomplished grade of teachers has been employed. How can teachers instruct in that of which they have no knowledge? The money designed for the high schools has been wrongly appropriated or misdirected. What are the remedies?—A restoration of the old system, and adequate support given to the high schools. In other countries where government support has been generously accorded to such schools, they have kept pace with the times in methods of instruction and usefulness corresponding to the development of wants. The high schools are centres, seats of learning to all classes of society alike, easily accessible to all and within the reach of the poor. It is undeniable that teachers spring from the middle and poorer classes.—the rich spend no time instructing their fellows. From the poor, those of moderate means are coming to the front, our sterling business men, our active and intelligent men, those eminent in the learned professions; men who under adverse circumstances would never emerge from comparative obscurity. Can the country then afford to educate the rich only? If our high schools continue diminishing in usefulness, the young of marked natural gifts must allow their talents to slumber or be forever undeveloped. There are but few graduates of universities at the head of the country high schools. A young man with a laudable ambition for a learned profession is to-day forced to go to the cities and larger towns for his preliminary studies. The poor cannot do it. The time was when from every academy went forth annually numbers to matriculate in some one department of our colleges. They, educated in the arts, in time came back to teach, and themselves sent out still others. Constantly was the number of teachers being recruited from the

teaching classed. In those days dozens studied the classics where one person does now—(he betrays his ignorance who questions the ultimate utility of the classics). Were all our villages large villages, graded schools supported by municipal taxation would give us schools of a high order; but a large village in a county is as infrequent as large towns and cities in a province. Liberal annual grants to the academies, as of old, would be a boon to the population of the rural districts. The academies would then be as they once were, centres of Superior Education within the reach of the masses. It is the latter whom governments should help, cherish, foster and educate. The active, rising men spring from them—the rich are in no way barred by like necessities as the poor. In Ontario, the maritime provinces, and in the States, legislation is eminently conspicuous for its decentralization tendency in educational facilities. The counties are first considered. They are the *prima et ultima* for the general good.

Better would it be to foster and cherish generously with government aid all high schools now in existence in the counties, than to let one languish and die, each is a light, perhaps dim, yet shedding many luminous rays in dark places.

Politicians of late have said that Quebec was a Province to flee from; why not make it one in educational matters to attract, to force emigrants to flock to? Emigrants are of the middle and poorer classes; must they continue to go to the cities in search of higher educational facilities, or ought they to find them in localities where their only capital—labor—can be profitably employed in the rural districts?

It is impossible to leave the subject without placing upon record an earnest protest against modern tendencies prevailing in many countries—that of placing the so called accomplishments in the first rank of things to be acquired. Really they are not worth the expense, involving as they do the devotion of nearly the whole of one's time to their acquisition.

Comparatively few arrive at real merit in them; hence they can only serve as temporary amusements, and should not be regarded as the end of education. They confer little honor and less profit, unless, as the result of special study, the outcome of them is of great excellence.

In all cases it is trifling with mental powers to follow light and feathery nothings with too close application.

Again, the cultivation of muscle-brawn—by aquatic sports, is not or should not be the sole aim of being. The incapables, the unteachable, and inefficient may be excused for devoting the major part of school-days to its development; but that muscle alone is manhood is an error. Physical education, it is true, should keep pace with mental development and growth of body, but the former should never take the place of the latter, only in proportion as the necessity “to hew wood and draw water” becomes the sole means of livelihood.

## FINALLY.

This slight sketch of defects and present needs must not discourage us. We have all through history shining instances of what can be done in spite of obstacles and difficulties, and though it is desirable above all things that a healthier educational atmosphere should surround us, yet there are many other elements requisite to a successful, superior system. We can be and, perhaps, are, diligent in application of means in our several departments, teacher and scholar alike, still success is not always the reward of diligence;

circumstances may set at nought the best made efforts. Labor, continuous and untiring, the will to succeed, will do much towards ultimate success in any undertaking. Nor does talent always succeed—energy—and tact supplying a multitude of deficiencies, are components of success.

“Step by step,” hard work, well-directed effort, put forth untiringly, and a fire, so to speak, to propel, genius, adaptation, and love for the special business, bring their meed of reward insure some distinction. It is the declared opinion of a sound writer, that, “impossible is the objection of fools.” With even the shadow of a chance many have achieved great purposes—wealth, influence, and position. But yawning is the usual characteristic of the inefficient and indolent. Nor does success follow the changeling—him who flits from one study to another from one occupation to another, with no other apparent purpose than to kill time; and those who seek the bright and pleasant side of school life only, are forced to work in later years. The scholar's estimate of his own abilities and acquisitions is apt to be exaggerated—over estimated—this is fatal to success. He should remember that a correct estimate of oneself is not based upon what we have or upon what his parents have and are, but upon what we ourselves are, and upon what we accomplish—this is a critical and not a false valuation.

#### Education of the Voice.

At a recent inter collegiate oratorical contest in this city, there was no more gratifying evidence of the good results of all such general competitions than the attention which most of the speakers showed that they had given to the management of the voice. The first prize this year, as last, fell to a student of Hamilton College; and at the reception given there to Mr. Laird, when he returned with the same honors won by Mr. Elliot, the services of Prof. Frink, who had carefully trained both gentlemen, received merited acknowledgment. The substance of an oration acquires its true value through a finished delivery, and it has been justly decided that the awarding of the prize shall depend upon the best union of both qualities. The competitors from Hamilton Columbia, Williams, Lafayette and Rutgers showed a marked improvement in this respect over their brethren of the previous year. In fact, only one or two of the speakers betrayed the influence of the old-fashioned, high-pitched, monotonous twang.

The ordinary American voice sorely lacks compass and variety. In clearness of tone and free and animated delivery, the American usually excels the English speaker; but he falls behind the latter in depth, richness and varied intonation. Foreigners have noticed the same peculiarity upon the same key. The only model of many of our political speakers is apparently the revival preacher, and nothing is more common than to hear an excellent address almost ruined by an artificial style of delivery. Our best orators have invariably cultivated the habit of using the deeper chest tones, through development of which the true power and compass of the voice can only be attained. In the “Rules for Declamation,” which Goethe wrote for the training of actors at the Weimar Theatre, he says: “The greatest necessity is, that the actor should utter everything he declaims in as deep a tone as possible; for he thereby reaches a greater compass of voice, and with it the power of giving all shades of expression. But if he begin on a high pitch he soon

loses the habit of a deep masculine tone, and with it the true expression of what is lofty and intellectual.”

The proper use of the voice should be taught in connection with the pronunciation of the language. It is absurd to refer the shrill or nasal voices of many Americans to the effect of climate; as well might the same reason be given for the sharp *a* of the Pennsylvanian or the lost *r* of the Virginian. Nasal voices are very common in some parts of England, but the educated classes there have inherited, through generations of culture, a deeper and more flexible larynx than ours. Vocal habits are first and most easily caught by children and unlearned with most difficulty by men. Yet, certainly, the voice being next to the brain the vehicle of the orator's power, it should be forged, and shaped, and tempered with the same patience and craft as the chieftain's sword. We are glad that this subject is at last forcing itself upon the attention of the Faculties of our Colleges. There will probably be some difficulty for awhile to come in finding competent instructors. The men who possess finely developed voices, and are thus able to give precept and example together, are rarely willing to relapse into pedagogues. President Gilman, of the Johns Hopkins University, we understand intends to establish a chair of Reading and Speaking, as indispensable to a thoroughly organized institution of learning. But the same course ought to be adopted by every Normal School in the country, in order to reach the great multitude of young pupils. Although a great deal of what the latter receive is worn off by careless home habits, some little always sticks; and the poor boy or girl who approaches the door of society later in life will find it beset with fewer terrors. Even well pronounced and agreeably modulated ignorance is much more tolerable than when it reaches us through the nose and accompanied by double negatives.

*N. Y. Tribune.*

#### Lighting the School-Room.

J. G. Cross.

There are several important considerations which demand attention, the first of which is that there should be abundance of light. Not only the comfort and success but the health of the pupils renders this imperative.

Nature in administering light from overhead indicates the true direction of light for general uses. The projection of the brow over the eye is the natural protection of this delicate organ from the direct ray. This being the only permanent safeguard which nature has provided cautions us to be careful in admitting light from any other direction.

The aesthetic sense is better satisfied with light from a single direction than from several, as by this arrangement the division of the surface of all objects into light and shade is simple, productive of harmony, and pleasing. This is more fully illustrated in the morning or evening when the oblique light gilds one side of all objects in the landscape, leaving the other in shadow, producing a general natural division which renders the morning and evening more enchanting than midday. Cross lights in a room are subversive of beauty both by destroying this simple arrangement of light and shade and by producing involved and unmanageable reflections. The best artistic effects require the light from a single direction and the aesthetic sense will not allow us to ignore this in the arrangement of the private

dwelling, or the public hall; much less in that of the school-room, to which we consign childhood for the impressions which are to form it for manhood.

But from what direction shall the light enter the school-room? If it was a picture gallery in which the beautiful creations were to be arranged on all sides, then unquestionably it should come from above centrally that all the pictures might be equally illuminated, and that the eye lifting upward toward the light should meet them in a subdued glow. Equally beautiful and serviceable is the effect if, with the light from overhead, the object to be viewed is placed before the eye. In most school-rooms light from directly overhead is impracticable and for the chief work of the school an elevated side light is equally serviceable and more picturesque.

The work of the school-room demanding light is reading and writing, and the light should be so admitted that in this work pupils will have no embarrassments, from insufficient light, from cross lights, nor shadows. The writer should receive the light from the left that the point of the pen or pencil may not be obscured in shadow. Any one may be convinced of the importance of this by trying to write with his right side to the light. He will discover not only that the hand overshadows the paper, but that an intensely black shadow keeps playing at the left of the point of the pen obscuring every word that is written. With the light from the left this is wholly relieved. That it may not shine directly in the eyes it should be admitted from the upper part of the window, the lower part being shaded. The room thus constructed will conform fully to the law of sunshine. The writer recently entered a school-room being newly refitted, the seats being arranged so that the light should fall on the pupils from the right. On asking the reason for the arrangement he was informed that it was "to place the teacher's desk near the door, the better to preserve order." It was the writer's opinion that if this arrangement was necessary to the good order of the school, this particular door should be closed and one constructed at the opposite end of the room, and the seating order of the room reversed that the pupils might have the advantage of broad light rather than be obliged to work in perpetual shadow. This arrangement of elevated light from the left gives the fullest advantages of the light, in all the works of study.

In a school room thus arranged the classes that stand to read and recite should stand with the back or side toward the light rather than facing it, that the light may fall on the book instead of on the eye.

If the light is admitted from the back of the room each pupil shadows his own work, while if it is admitted from the front of the room each pupil shadows the work of the pupil behind him. The writer recollects once having conducted an examination in a room lighted from the rear, and while the blinding light too strongly illuminated his face, that of each pupil was in strong shadow utterly obscuring all play of feeling so necessary between teacher and pupils in a successful recitation. The teacher recorded on the tablet of memory an irrevocable vow, never again to allow himself to work under such a disadvantage.

While the laws of unity and contrast require that the light shall fall from only one direction, its practical application in the pupil's work clearly shows that it should come from the left.—*Chicago Practical Teacher.*

## The Great Pyramid.

REV. W. H. DANIELS.

The art of building pyramids did not grow up with Egyptian civilization, as appears from the fact that the oldest is by far the largest and most perfect. There are dozens of other pyramids in the Nile valley, but they are all mere imitations of the Great Pyramid, and are not only inferior in size and workmanship, but are wholly wanting in those mysterious mathematical and astronomical correspondences which prove the architect of this monument to have been the equal of the best astronomers of modern times, unless, indeed, he were working under the direct inspirations of the Divine Mind. Dr. Seiss, in his lectures on "The Miracle in Stone," says: "The Pyramid bursts upon us in the flower of its highest perfection. It suddenly takes its place in the world in all its matchless magnificence; without father, without mother, and as clean apart from all evolution as if it had dropped from the unknown heavens. We can no more account for its appearance in this fashion on ordinary principles, than we can account for the being of Adam without a special Divine intervention."

The age of this vast pile, as indicated by data wrought into its own structure, is 4,048 years, it having been built B. C. 2170, about the time of the birth of the patriarch Jacob, and only a little more than 500 years after the Deluge.

On its northern side, some fifty feet from the ground, is a narrow descending entrance, which remained undiscovered for 3,000 years, whose straight, smooth, polished interior surfaces suggested to Sir John Herschel in 1839 the idea of a huge telescope leveled at some star in the northern heavens; and, reckoning backward along the celestial cycle, he found that in the year 2170 B. C., the star Alpha, in the constellation Draconis, which was then the polar star, was looking straight down this great telescopic tube, while at the same time Alcyone, the central star of the Pleiades, which modern science names as the central sun of the universe, was on the meridian, in the line of the Pyramid's vertical axis.

This double star-pointing, which was remarkable in itself, and which could never occur again for 25,000 years, was thought to have been intentional; and if so, it fixed beyond dispute the exact date of the great Pyramid—more than this, it showed that the Pyramid builder understood that greatest of all time-cycles of the heavens, whose hours are figured by constellations, and whose minutes are marked off by suns.

Another surprise which the Great Pyramid gave its explorers was the discovery that its four sides *exactly* faced the four cardinal points of the compass. It is easy enough to find the east and the west, the north and the south, approximately; but to do it exactly is one of the most difficult problems in astronomy; yet the Pyramid builder solved it. It is said that the Greeks, in the height of their glory, could not find the cardinal points astronomically within eight degrees; while the orientation of this building, that was ancient before Homer was born, is true to the four quarters of the heavens to within only about one minute of one degree.

But this astronomical knowledge was not Egyptian, as appears from the fact that while all the other pyramids are evident imitations of the first, none of them show any such knowledge of the heavens as is here most evident.

Again, it is claimed that the scale of measurement used in constructing the Great Pyramid, that is, "the pyramid inch," is taken from the polar diameter to the



earth, of which line, as given in the best recent authorities, it is a fraction which may be expressed by the decimal five ten-millionths. The square of this decimal gives, so they say, that singular and much disputed measure, the sacred cubit of Moses; or rather, it gives the mean between the two extremes of length thereof, as computed by Sir Isaac Newton. Now, taking this pyramid inch as the scale, it is found that the sum of the two diagonals of the base of the pyramid is 25,868 inches, which happens to be the exact number of solar years in the great astronomical cycle; also that the height of the Pyramid is an even decimal multiple, according to the most recent calculation, of the distance from the earth to the sun.

The Pyramid builder also knew where to find the poles of the earth, which implies a knowledge of its spheroidal shape, or that its equatorial diameter is longer than its polar axis. Modern science ascribes the discovery of the true figure of the earth to Thales, who flourished about 600 B. C.; but the location of the Great Pyramid, where it marks the exact middle parallel of latitude between the equator and the north pole, clearly points out the possession of this knowledge by its builder more than 1500 years before Thales was born. There can be no mistake about this point, for the sides of the square base of the Pyramid record an even fraction of the earth's axis, multiplied by the number of days in the year.

This is enough to be surprising. But there is much more to the same purpose in the works referred to, as for instance, the indications that the pyramid builders had weighed as well as measured the earth; which appears from the fact that the weight of the Pyramid is, as nearly as can be computed, "the even one thousand billionth part of the weight of this whole earth-ball of land and sea."

It is now proposed by professors of pyramidology to adopt its standards of measurement instead of the French *metre* and the English inch, on the ground of its more scientific character—a position which is not very flattering to the vanity of modern science, but which it is impossible to deny. The French *metre* is the ten-millionth fraction of the quadrant of the earth's surface, measured on the meridian of Paris, being the fraction of a curved line (equal to thirty-nine and four tenths British inches of "three barleycorns" each), while the ten-millionth fraction of the straight line of the earth's semi-diameter gives the "pyramid cubit," the square root of which gives the "pyramid inch," both of which measures, as we are told, enter very largely into the chronology and theology taught by the great Pyramid.—(*Pennsylvania School Jour. al.*)

### Etymology—Its Uses and Abuses.

A paper read by the Rev. Dr. MORRIS before the College of Preceptors.

Etymology deals with the history of words—the sources from which they are derived—the various changes they have undergone in form and meaning, and their historical relations to cognate terms in kindred tongues. It is the business of the etymologist to discover the original form and meaning of words, by the resolution of compound into their simple elements. In English and in all its Aryan congeners, what appear to be the most simple forms are in reality not so, but on being subjected to a closer examination are found to be derivatives or compounds. Etymology is an analytical science, and is, so to speak, the chemistry of speech. In

the linguistic laboratory compounds are resolved into their elements, whereby the qualitative values of the component parts are exactly ascertained. It is not, perhaps, possible to make the pupils in our schools chemists or philologists; but, by a rational treatment of these and other scientific studies, we may not only use them as a mental training and intellectual discipline, but may also succeed in fostering a decided taste for one or more of them, which shall excite a spirit of inquiry, and lead the student to take up some one subject for special investigation when his school-days are ended, and he is out of the leading-strings of his instructors. We should seek to make the pupil love knowledge for his own sake, for the spirits of research is as valuable to the student as the results which it enables him to produce.

Professor Max Miller has well observed, that "there is in the human mind a craving after Etymology; a wish to find out, by fair means or foul, why such a thing should be called by such a name." In directing the attention of the speaker or reader to the words he uses, we are only satisfying a natural curiosity—and curiosity is the parent of knowledge. We cannot hope in our schools to produce scientific etymologists, that is to say, philologists; but we may, by "word-analysis," enable those we teach to perceive many linguistic processes, and learn much of the first principles of the science of language.

As no instruction can be carried on without the employment of words (or of signs and symbols answering to them), the right understanding and use of them are matters of no slight importance; but the accurate and exact employment of words must in a great measure depend upon the manner in which we have seized their true and real signification; for words without sense are a useless and barren acquisition. The skillful teacher is not likely to overlook this point. In the study of Botany, Geology, &c., there is presented to the learner a scientific terminology which always amounts to a new language, and the memory is often severely taxed in the demands thus made upon it. The teacher usually attempts to lessen the mental strain by the aid of the very principle upon which this retentive faculty depends (the association of ideas). He calls in Etymology as his auxiliary, and associates the new terms with their original meanings, and thus enables the learner not only to have a stronger hold upon the words but a far clearer appreciation in their meaning than he otherwise would have had. Thus Derivation (a branch of Etymology) not only enters into all grammatical teaching, but forms a part of many other and widely different branches of knowledge. But it is the linguistic side of Etymology that is to occupy our attention this evening.

Here, again, its importance, especially as regards our own language, has received general acknowledgment, judging by the number of independent works on Etymology (few, however, of a trustworthy character), and by the copious lists of roots that one finds, not only in English grammars, but even in ordinary school reading books. It has always seemed to me a great waste of labour to load such works with long lists of Anglo-Saxon, Latin, and Greek roots. There is, of course, some reasonable excuse for lists of prefixes and suffixes in a grammar—they render the work more complete, and are valuable for reference; but a long array of Teutonic and classical vocables are not necessary in English grammars and readers. As a rule, such collections are very inaccurate, especially so are the lists of Teutonic roots. An Anglo-Saxon dictionary is often the only guide the compiler seems to have had. He has



little or no knowledge of the language itself, and he is, therefore, easily led astray when his authority is inaccurate, or fails him altogether; and so we frequently find in such lists imaginary roots, unreal derivatives, and unhistoric connections. If the teacher thinks that the history of the Teutonic element in his own language is worth knowing, and worthy of a place in any educational course, let him take the trouble to make himself acquainted at first hand with its older forms through its early literature, and he will not have occasion to employ any "word-lists." His own reading will furnish him with an ample store of roots. His knowledge, thus derived from the fountain-head, will keep him clear of many of the most common faults made by those who rely on dictionaries alone. His derivations will not be marred by "guess-work," and he will not easily be misled by accidental resemblances.

One important part of English etymology is the grouping of words derived from the same root, as (1) *bind, band, bond, bandog, bandage* (but not *bondage*), *bundle, bindweed, bend*, &c.; (2) *burn, brine, brand, brunt, brindled, brimstone, brown; brandy, bruin* (through the Dutch), *brunette* (through the French). This is an interesting process whereby the laws of word-formation are discovered, and the pupil should be encouraged to perform it; the teacher being content to correct any false derivatives which are sure to be suggested.

I find that a recent compiler of school books has, under the title of "The Branching of Words, introduced this subject to a rather youthful class of learners in one of Chambers's English Readers"; unfortunately, he has committed the very mistakes that the pupils must be guarded against,—he has found resemblances where none really existed. Serious blunders occur on every page; they are, however, instructive as showing how easily one may be deceived by a mere accidental similarity. With *beat* (to strike), the compiler connects *bat, battle, batter* (all of which are directly of Roman origin). *Butter*, too, is made to intrude itself into this family (cf. Greek *bouturon*, from *bous*, ox, and *tuos*, cheese). *Butter* would, of course, suggest *buttery*, which however is allied to the *bottle* family. Grouped with *break* we actually find *broach* (connected with *brooch* and *brocade*); and *brush* (directly from the French) connected with *brush* in *brushwood*; *bruise* is connected with *burst*, but it comes through French into English; *bray*, direct from the French; *brittle* (A. S. *breotan*, to break.) With *lie* he wrongly connects *alight*; this latter, however, is of the same origin as the adjective *light*. And in the *meet* group, we find *mate*, of uncertain origin, which may represent M. E. *make*, a companion. *Note* is wrongly connected with to "moot." *Tally*, of Romance origin, is made a relative of *tell*! Some of these guesses are so bad that one is reminded of Swift's whimsical derivation of *apothecary* from a *pot he carries*.

This false grouping is an abuse of Etymology, and can serve no useful purpose. It is misleading and bewildering, and does much to make the subject contemptible. In this matter, accuracy is of the highest importance. With respect to the classical element in English, the teacher—and perhaps pupil too—is no doubt placed under more favourable circumstances, and has no need to resort to any cut and-dried "word-lists." But, with whatever element the teacher may be dealing, I would say, do not burden the pupil with any long lists of roots, for it is by no means necessary. I would say, too, do not try to teach Derivation as you would Geography, History, &c. In these and numerous other subjects in the educational curriculum, all the facts are at first foreign to the learner, and outside his ken and observa-

tion, and have to be brought in systematic order before him. A large amount of "memory-work" has to be got through; the dry skeleton must be built up before it can take a flesh covering on it, and be vivified. As regards English etymology, the facts are not altogether beyond the pupil's own observation and experience. He has a store of them; they are ever ready at hand, if he can but speak and read his native tongue. This store of knowledge that he is in possession of may easily be increased by other related facts, if, as is most likely the case, he is learning other languages in addition to his own. How inexpensive a pursuit is etymology!—no materials to be purchased for analysis, no journeys to be made for the purpose of personal investigation. Under such conditions, the teacher need not be at any trouble to make large demands upon the learner's memory, but may rest satisfied with what he finds, and endeavour skilfully to employ the materials at hand as far as they will go. He will have numerous opportunities of directing the attention of his class to the derivation of words, whether it be in Grammar, in Dictation, in the study of an English classic, in the acquisition of foreign languages (living or dead) and even in the very words that master and pupil make use of in their ordinary intercourse of speech.

An English Grammar lesson would receive additional interest and liveliness, were the subject of word-building as well as inflexionable changes introduced to the notice of the class. Thus, for instance, in the treatment of *abstract nouns*, the pupils might easily be led to understand their true derivative character by the analysis of a few words like *goodness, whiteness, health, stealth, drift*, &c. They should also be required to form synthetically other abstract terms in strict analogy with those they have already dissected. I have found it useful to take such a word as *distant*, and ask for the abstract formed from it; as soon as I get the word *distance*, I try to have it translated, so to speak, by a more familiar expression (no great fault if it has to be coined for the occasion) as *far-off-ness*, or *apart-standing*; *ignorance* will be turned into a state of *un-knowing* (not an uncommon word in Middle English), or by an *un-knowingness*; *vision* would be rendered by *sight*; *confection*, a *make-up*; and so on. Or the process may be reversed: an abstract term may be given, in order to find out whether the concrete is known. The class will see why such an expression as "a state of ignorance" is loose and inaccurate, the suffix itself marking *state* or *condition*. In dealing with the adjective, the teacher will shew by analysis how certain words (nouns or verbs) are fitted to be used as qualifying terms by a slight addition, as *hopeful, trusty*. If, as is most likely, the learners have some knowledge of Latin, their attention should be called to analogous formations; as *double* (*duple*), and *duplex*=*two-fold* (we once had *one-fold*=*simple*); *plentiful* and *copious* (cf. *bountiful* and *bounteous*); and so on with the other part of speech. In pursuing this method there is little need of "cram." The habit of analysing thus induced will do much to make a class think a little more of the instruments they are always using, and they will feel a pleasure in finding that they cannot only dissect words but also make new ones out of existing material. I do not advise the teacher, at any early stage of linguistic teaching, to trouble his scholars with the origin of inflexionable suffixes; there were all once, no doubt, separate words, but have suffered such alteration that the closest analysis and comparison often fails to discover their primitive form and meaning. With few exceptions, the origin of suffixes can only be understood by bringing forward *comparative forms*; but there can be no *comparison* before the facts themselves are acquired.

In a reading lesson, derivation naturally comes to the fore in connection with the meanings of words, especially of that large class called "dictionary words." It would properly come in as an intellectual exercise, after the elocutionary or physical part of the lesson had ended, but it should not interfere with it. The consideration of the difficult words would form one or more etymological lessons. There are two ways by which the meanings of words are discovered. The first method is inductive, but this involves several processes. Elimination and approximation are necessary before the precise meaning or definition can be arrived at. But young readers would not take much trouble for themselves in this way; they are quite satisfied with a sort vague notion of the meaning to be got from the context, and will not pause to consider whether each word carries home to them its own special signification. It is therefore often necessary to let them see how little they really know, and that, after all, the words they have been reading are mere sound and nothing else. Their efforts to define a word are often fruitless,—oftentimes after the manner of Bardolph's attempt to fix the meaning of *accommodated*; "accommodated:—that is when a man is, as they say, accommodated, or when a man is being whereby a' may be thought to be accommodated: which is a most excellent thing." I have often heard the most absurd misuse of terms from school-children, arising from the reading or hearing of words that were but imperfectly understood, or entirely meaningless. A boy once told me that he had a *vicarious* vein. He meant of course *varicose*; another declares he was suffering from a *cereal*, instead of a *cerebral*, complaint; and a third, who talk of *hybrid* terms, imagined they meant "not low-bred" ones. Similar blunders are committed by even older folks; there was a certain parish clerk who always spoke of the "psaltery and harp" as the "puzzle-tree and harp." The second method of ascertaining the signification of a word is by an etymological analysis,—that is to say, by *deduction*. This process is, of course, only an aid to definition. It cannot always be relied on for the present sense of a term. It is one of the things that the pupil has to learn, that words are constantly, though slowly, changing their form and meaning. Various shades of signification, arising out of the original, will often appear to be at variance with it. It will form a useful exercise to reconcile this apparent inconsistency by starting from the primary sense and by tracing out the various secondary meanings that have arisen out of the original root. Take the word *buxom* for example (M.E. *buhson*, *buhson*, from *bugan* to bend): (1) flexible, pliant; (2) obedient, submissive; (3) gracious; (4) good-humoured; (5) lively, healthy. Or take *crescent* as an illustration. It literally signifies "growing," "increasing;" then "the increasing moon," a crescent-shape row of houses, &c. It even "developes a group of new uses out of the fortuitous presence of the figure on the Mohammedan standard." A part of each reading lesson, then, should be devoted to meanings and to etymology.

The principle of "grouping" may of course be applied to the classical as well as to the true English element. Suppose the class to know nothing of Latin, and that one of the words that occurs in the reading lesson, and is picked out for explanation, is *superscription*. Instead of at once trying to define the term, let us ask for words that contain the syllable *script*. There would be no difficulty in getting *description*, *inscription*, *subscription*, *scripture*, *prescription*, *postscript*, *transcript*, *script*, &c. From some of these nouns the class will discover the verbs from which they are formed, and would supply *describe*, *subscribe*, *transcribe*, *inscribe*, *scribe*, *scribble*.

Starting, then, from the vocable *scribble*, we should experience little difficulty in determining its meaning, and associating it with the notion of "writing." Then, by the further analysis of each derivative, we should be able to bring out the force of the various prefixes and suffixes.

An easy lesson in composition might be made by the selection of a root or two that has been thus dealt with, to be worked up into a short narrative, which should contain all their well known derivatives. Or a piece of dictation might be given containing the branchings-out of a common root. The teacher of course would have to take the trouble to prepare a suitable passage in which the derivatives of forms like *leg*, *gen*, *pone* (*pos*) would be introduced.

The piece to be dictated need not be long. The following rough attempt, with the root *leg* (*lec*), will suggest my meaning:—

"The lectures and lessons we received were much liked by those *intelligent* and *diligent* pupils who were deemed *eligible* for college life. The names of the *selected collegians* were not *legion*. We do not *recollect* the names of our *colleagues*. Some of them were by no means *elegant* in their attire. Their writing was not always *legible*. Many *legendary* matters were *collected* by those not *negligent* in *culling* such trifles. We did not *neglect* our *religious* duties; *collected* were said daily, and *collections* for the poor were made weekly."

But, to go a little higher, a class are engaged in the pleasant and profitable task of studying an English classib—say a play of Shakspeare. Here the teacher must be careful not to fall into the error of making his author a mere collection of "word puzzle." It is the duty to ascertain whether the students have read with the understanding, or only mechanically by getting up all the philological notes supplied by an indulgent editor. I have often been quite startled when, ignoring the "Notes" of the text, I have attempted to test the class by making a *paraphrase* of a tolerably plain phrase or passage, to find what a small amount of thought had been expended in laying hold to the author's meaning. I suppose that their very familiarity with the words of their author is itself a snare to them, and they imagine they know what is meant when they really do not, or have only a vague notion. It is a good plan to require classical derivatives to be explained by analogues English informations, as *obliged* = *bound*; *regard* = *look on*; *habit* = *behaviour*; *contiguous* = *touching*; *to impose on* = *to put on*; *fertile* = *(fruit)-bearing*, &c.

Examining a very intelligent class lately, who were reading the "Merchant of Venice," I found nineteen out of twenty completely at a loss to explain the phrase "slips of prolixity." The nearest rendering that occurred to them was *exaggeration*. By analysing *prolixity*, the meaning of *prolix* was exhibited, and its association with *laxus* pointed out. They was then no difficulty in shewing that *slips* = *mistakes*; and they saw a similar formation in *lapse* from *labor*. Most members of the class were also perplexed by a passage that occurs just before this: "If my gossip Report be an honest woman of her word, &c." It is left unexplained in the "Clarendon Press" edition, and no attempt had been made on the part of any of the class to make it out for themselves. A reference to the etymology of *gossip* soon set the matter right. (1) *gossip* = *god-sib* = one *sib* or akin in God; one having a spiritual relationship, as a God-father or God-mother; (2) a familiar friend; (3) a woman's bosom friend; so used by Chaucer, and by writers after Shakspeare's time, &c. The *metaphor* employed was also alluded to.

In this passage several linguistic principles were

involved, independently of the phonetic history of *gossip*. In the transition from the meaning of *sponsor* to that of familiar friend, we have an instance of *generalisation* or extension of meaning; in limiting it to a woman, we have *specialization* or restriction of meaning; its modern use illustrates *deterioration* of meaning: and lastly, there is the employment of metaphorical or figurative language. Each of these linguistic principles might be illustrated more at large, if necessary, by the chance of meaning in other words. We see deterioration in words like *cunning*, *craft*, *fellow*, *knave*, *officious*, *sly*, &c. Occasionally we have the very reverse of this process, as in those terms that have acquired a slightly improved meaning, as in *fond*, and *minister*, *nice*, *shrewd*, *knight*. (The German *knecht*, however, has deteriorated.) The restriction of meaning is seen in words like "conceit," a taking-up mentally, hence an idea, conception, and lastly a vain thought or imagination, hence vanity. This principle has been at work in *acre*, *furlong*, *planet*, *month*, *journal*, *bishop*, *priest*, *carpenter*, *smith*, *vision*, *speculation*, and many others. "The idea of *rolling* is specialized into the muster *roll*, the breakfast *roll*, the *roll* of the drum, and *rolls* of fat; by a longer route it comes to us in the form of the actor's *rôle*, and a slight addition makes of it *control*"\* (= *counter-roll* = O. F. *contre-rôle*, "a duplicate register used to verify the official or first roll." *Rôle* carries us back to *rotulus*, from *rota*, a wheel).

The generalization or extension of meaning is the reverse process of that we have just mentioned, and very different in its effects, enlarging instead of contracting the sphere of a word's meaning, often apparently quite independently of its original signification. This process is to be traced in class names and technical terms, as *book*, *paper*, *copper*, *gazette*, *bank*, *bankrupt*, *legion*, *pomp*, *privilege*, &c. Occasionally, however, we find instances of common words receiving a technical application, as *sight* in the following passage: "Soldiers while at musketry practice, blacked their *sights* by setting fire to a piece of camphor and holding them in the flame." *Shunt* is now only a technical word—it was not so in the 14th century. It is not likely to remain such, for there is a tendency to use it in the general sense of "to put aside," "to put off."

Connected with this generalization are figurative transfers, so general in all languages, even in the most familiar terms. This principle has a truly creative power, and adds largely to the vocabulary of a language. Thus, a dog has several qualities; it can trace or track out; it is sometimes sullen, hence we can make a mental transfer and talk of "to dog" (and "to hound down"), *dogged*, *doggedness*. We notice one of its physical peculiarities in *dog's-eared*. How vigorously does Shakespeare employ this very metaphor, along with others, in the following passage (King John IV., 3, ll. 145-150):—

\* England now is left  
To tug and scramble, and to part by the teeth  
The unowed interest of proud-swelling state.  
Now for the bare-picked bone of majesty  
Doth dogged war bristle his angry crest.  
And snarleth in the gentle eyes of peace."

Again, "Since fruit is apt to be *green* when not fully ripe, *green* becomes a synonym of *unripe* (and so we can commit the familiar linguistic paradox—that blackberries are red when they are *green*); and then, in less elegant diction, it is again shifted to signify immature, not versed in the ways of the world..... Our minds delight in the discovery of resemblances, near and

\* Whitney.

remote obvious and obscure, and are always ready to make them the foundation of an association that involves the addition of a new use to an old name. Thus, not only an animal has a *head*, but also a pin and a cabbage. A bed has one, where the *head* of its occupant usually lies, and it has a *foot* for the same reason, besides the four *feet* it stands on by another figure, and the six *feet* it measure by yet another. More remarkable still, a river has a *head*, its highest point, namely where it *heads* among the highlands—and so it has *arms*, or by another figure *branches*; or by another *feeders*; or by another *tributaries*; and it has a right and left *side*; and it has a *bed*, in which, by an unfortunate mixture of metaphor, it *runs* instead of lying still; and then at the farthest extremity from its head we find, not its feet, but its *mouth*. Further, an army, a school, a sect has its *head*; a class has its *head* and *tail*, and so has a coin, though quite in a different way. A sermon has its *heads*, as divided by their different *headings*, and we can beg to be spared anything on that *head*. A sore comes to a *head*; so, by one step further away from literalness, a conspiracy, or other disorder of the state (the body politic) does the same. We give a horse his *head*, which he had before our donation; and then we treat in the same way our passions, that is to say, if by their overmastering violence we lose our *heads*."\*

All metaphor comes under the head of figurative transfer. It is such a common habit of speech, that every language is, as Richter has well said, a dictionary of faded metaphors. To this principle we owe nearly all words that designate our mental and moral conceptions; as *wrong*, *right*, *upright*, *simplicity*, *apprehension*, *fathom*, *intelligence*. This transfer of physical and sensible relations often gives a very striking explanation of the more intellectual or abstract terms. In a play of Shakespeare there is full scope for the treatment of this principle, and the pupil's ingenuity should be exercised in tracing out and explaining the metaphor involved. Take as an example the following from the "Merchant of Venice":—

"And other (fellows) of such *singular aspect*."

Here the "sour-look" shows an *acid* state or bitterness of temper; and the metaphor is well expressed in the word *acerbity*. The same root occurs in the name for that sharp or *acute* attack of fever called *ague*, which we are not *eager* to experience. In the same scene of this play, a few lines off, we light upon another passage full of metaphor, of which we may take a part for examination:—

"There are a sort of men, whose visages  
Do cream and mantle like a standing pond,  
And do a wilful stillness entertain."

Each *metaphor* should be first expanded into its corresponding *simile*, and the points of resemblance particularised. Each word entering into the metaphorical expression will often be found to be itself figurative or metaphorical; as the standing or stagnant pond with its creaming or mantling (cf. "the green mantle of the standing pool," in King Lear). The difference of metaphor between *cream* and *mantle* should be noticed. How bold metaphor is may be seen in such expressions as "the *cream* or best part of a thing," and in the phrase "to *dismantle* a fortress."

I need not dwell, then, upon the importance of English Etymology as an intellectual exercise. It may, of course, be easily abused by being made to encroach

\* Whitney.

upon the subject which it is intended to illustrate. Much more might be said with respect to this, but we must pass on to other branches of linguistic teaching in which Etymology need not be ignored. The Latin grammar exercise or author may be made to serve several useful purposes. In the first place, every Latin word should, if possible, be associated with its English derivatives; in the next place, "word-analysis" should not be overlooked, as it will serve to make a grammar or reading lesson more lively and interesting, and the knowledge gained will be more intelligent and fruitful. In this matter the pupils' philological knowledge should be based upon their own observation. They will doubtless notice the frequency of certain Latin suffixes in such verbal nouns as *ag-men*, *flu-men*, *lu-men*, *se-men*, *stra-men*, &c. A slight inspection will enable them to detect the verbal stems: *ag*, lead, drive (with *ag-men* compare Eng. *drove* from *drive*); *flu*, flow; *luc*, shine; *se*, sow; *stra*, scatter. With *lu-men* = *luc-men* is, of course, connected *luc-erna*, *luci-dus*, *luci-fer*, *lux*, *lu-na*, *lucubratio*, *illu-stris*, &c. The dropping of the guttural before a nasal may be further illustrated by *fla-men* = *flag-men*, *fla-mma* = *flag-ma*; *semen* contains the same root as our *sow* and *seed* (cf. Ger. *sa-en*, to sow; *Sa-men*, Saat). The Latin *severe* is a reduplicative form = *sesere*. Another common suffix is *trum*, as in *ara-trum*, from *arare*; *fero-trum* from *fero*\*; *clausurum* from *claudere*, *rostrum* from *rodo*. The last two words may serve to point out a similar phonetic change in other terms. Thus the supine ending is always *tum*, however much distinguished it may be, for *clau-sum* = *claud-tum*, &c.; so *cas-us* = *cad-tus*; *visio* = *vid-tio*; *lassus* = *lad-tus*.

Other common suffixes are *-bulum-bula*, *-culum*, &c., in *pa-bulum* † (from root *pa* in *pascor*, to feed); *fabula* (from *fa*, to speak); *speculum* and *spectaculum*; *ful-crum*, *jaculum*; all of which are easily analysed. The consideration of some suffixes leads to interesting results; thus *fa-ma* contains the root *fa*, speak, and suffix *ma*; so *bruma* = *breu-ma* = *brevi-ma*, connected of course with Latin *brevis*, short.

The teacher should endeavour to avoid taking up doubtful or difficult formations. The comparative philologists knows that *cere-brum* is *brain-bearer*, the first part of which † is cognate with M. E. *hern-pan* = *brain-pan* (cf. German *Ge-hir-n*); but it would not be clear to the ordinary scholar, who probably would be unable to connect *cer* in *cerebrum* with *cer-vix*, *cer-nuus*, *pro-cer-es*, § It would be a sheer waste of time indeed to dwell upon such points as these, and doubtless the class would regard them much in the same way as they would the tricks of a very clever conjuror.

Word-grouping, too, might find a place in a Latin lesson: *habeo* would suggest *cohibeo*, *prohibeo*, *exhibeo*, *inhibeo*, and *debeo* (= *delibeo*); *habito*, *inhabito*, *habitat*, *habitus*, *habitud*, *habena*, *habilis*. *Acer* would suggest *acidus*, *acidulus*, *acerbus*, *acerbitas*, *acerbo*, *acies*, *acervus*, *acus*, (needle), *acuo*, *aceo*, *acetum* (vinum), &c. || The root *cand* (originally *skand*), to shine, burn, occurs in *candeo*, *candesco*, *candico*, *candentia*, *candor*, *candidus*, *candido*, *candidatus*, *candela*, *candelabrum*, *cincindela*, *incendo*, *census*, *incendium*, *incendialis*, *incensio*, *incensum*, &c.

Attention may also be directed to the root meaning; as in *computo*, *amputo*, denominative verbs from *putus*

= *pure*, *clear*. ¶ *Puto*, then, means to *clean up*, by trimming or pruning; to *clear up* (as an account), and so to *reckon*, *calculate*, *think*. *Redintegratio* = *restoration* goes back to vb. *integro*, from *integer*, *whole*, *sound*, from the root of *tag* of *tango*, to touch. So *suadeo* must be connected with *suavis* (= *suavis*) *sweet*; compare *suavium*, a kiss. The root *pet*, to fly, in *peto*, brings out the meaning of *impetus*, *impetuosus*, *perpes*, *penne*, *præpes*, *accipiter*. The root often gives the leading meaning, but where it does not, the pupils' attention should be directed to it; \*\* as, *mitto*, to throw, let go, let loose; compare *missio*, *missilis*.

Without talking of Grimm's law, the progression of mutes would doubtless be a matter they would take note of in such familiar words as *pa-ter*, *fa-ther*, *pes* (= *peds*) *foot*; *fra-ter*, *bro-ther*; *forare*, to bore; *dens* (= *dents*) *tooth*; *decem*, *ten*; *duo*, *two*; *tres*, *three*; *tu*, *thou*; *canis*, *hound*; *cor* (= *cords*), *heart*; *ego*, I. (O. E. *ic*), &c.

The teacher, however, should not be anxious to draw attention to these phonetic changes at any early period of instruction in Latin. In most of our schools French is taken up about the same time as Latin, and the study of the two languages go on together. To a certain extent comparative etymology is forced upon the pupil, and the teacher would, of course, take care to explain the real nature of the likeness between the living and dead tongue. Apart from this easily recognised similarity, the pupils' attention would be directed to numerous letter changes; all taking place, not arbitrarily, but according to the regular phonetic laws. They would thus be enabled to trace the connection between words looking very much unlike, and yet having an etymological connection as *couch*, *lieutenant*, and *collocate*; *chief*, *captain*, and *cabbage*; *caje*, *cajole*, *jail*, and *cave*, &c.

In comparing *fête* with *feast*, and *tête* with *testy* (Fr. *têtu*), &c., they would see that the dialect that gave us our words was not identical with modern French. The word *tête* is a good example of a popular super-seeding a literary form. It carries us back to Latin *testa*, originally a piece of burnt clay, a pot; head or skull (cf. Eng. *brain-pan*). *Têt*, a skull, shell, is the doublet of *tête*; *test*, *teston*, *tesson* are allied words. Of course we might trace this much further. Lat. *testa* stands for *tersla* (cf. *tostus* or *torstus*), which is a derivative of *torreo* (= *torseo*). \* *Terra* is dry land, *das Trockene*. More remotely, *torreo* is connected with the root *tars*, to be dry (cf. Sansk. *tarsha*, thirsty Eng. *thirst*; Ger. *Durst*).

Examples of compounds will afford plenty of room for "word-analysis." The grouping of words bring out strongly the principles of word-building; thus, the English words *mount*, *amount*, *surmount*, *insurmountable*, *dismount*, *mountain*, come to us through the French from the Lat. *mons*; and M. Bréal, in his "L'enseignement de la Langue Française," shows us how this grouping may be made very instructive. He says:—

"Ici surtout il importe de choisir ses exemples: autant que possible des verbes, et des verbes ayant pris naissance en Français. Tel est le verbe *monter*, qui vient du substantif *mont*, l'idée du mouvement ascensionnel en général ayant été exprimée par un verbe qui voulait dire d'abord escalader une montagne. Voyez-vous la hardiesse d'une langue qui dit: *monter à cheval*, le prix du blé a monté, le vin monte dans la bouteille. Ce verbe a donné les composés: *surmonter* (avec son

\* Cf. Eng. *bier* and *bear*.

† *Pa-bulum* = a means of feeding; *pa-bulatio* = feeding cf. Eng. *fodder* from *food*; compare also *panis*, *pater*, *papa*.

‡ A very advanced class might see that the *brevis* = *bregvis*, from root *breg*, of which *frag* in *frango* is a variant, cognate with English *beak*.

§ Cf. Sansk. *ciras*, head, Gr. *kara karanon kranion* (Eng. *cranium*).

¶ *Occa*, *ocior*, and *equus* are probably connected with the root *ak*. ¶ *Purus* belongs to this root *pu*, so does *purgo* (= *purigo*), *pius* and *punio*.

\*\* The compounds *admitto*, *enitto*, &c., indicate this. \* Cf. *torrens*, *torridus*, *torrido*, *torris*; *testudo*, *testum*, *testaceus*, &c.

dérivé *insurmontable*), *remonter* (un cavalier de remonte), *démonter* (cette interruption a *démonté* l'orateur). On dit aussi : la *montée* d'une colline ; le *montant* d'une échelle, ou encore d'une note à payer ; le *montage* d'une machine, d'une filature ; la *monture* d'un cavalier, ou encore celle d'un thermomètre, d'un violon, d'un pistolet, d'un éventail, d'un bijou. Quant on dit qu'un directeur de théâtre *monte* une pièce, on compare le drame à un mécanisme dont les acteurs et les décors forment les ressorts et les rouages. *Monter* la tête à quelqu'un, c'est lui disposer la tête de telle façon qu'elle soit prête à un certain acte, ordinairement quelque sottise. Nous retournons maintenant au primitif *mont* pour l'entourer de ces dérivés *montueux* et *montagne* (qui a donné *montagnard* et *montagneux*). Enfin, en Latin *mons* avait déjà donné *promontoire*."

It is now almost time to bring this paper to a close ; but before doing so I must crave your indulgence for a while, while we just glance at another modern language admirably adapted for etymological analysis and linguistic training. German is perhaps not so popular in our schools as French ; but it is a speech rich in derivatives and compounds, and most fully and clearly illustrates the processes and principles of "word-building." ; I need hardly dwell upon the close kinship of German with English—a fact that every schoolboy soon finds out for himself, though he is often ignorant of the true relationship that exists between them, and fondly imagines that the English people had no language before the Germans made them a present of theirs.

The pupils will experience no difficulty in connecting *Bruder* with *brother* ; *Dieb* with *thief* ; *Brod* with *bread* ; *theilen* with *deal* ; *zwei* with *two*, &c. From this comparison they will soon find out the regular interchange of sounds between these two kindred tongues. They will also be enabled to see that German often preserves older forms, that is to say, has undergone less change, than modern English ; as, *Hügel* and *hill* ; *stiegen* and *fly* ; *Vogel* and *fowl* ; *Zahn* and *tooth* ; *ich* and *I* ; *Kinn* and *chin*, &c. It should be the teacher's business to see that no compounds are slovenly passed over, without any attempt to analyse them. Many analogies will suggest themselves in this operation. Thus *be-kommen* answers to our 'to come by,' 'to get,' 'obtain' ; *Verbrennung* = 'a for-burning,' 'a burning up,' 'combustion' ; *Biagsam-keit* etymologically corresponds very closely to M. E. *buxomnesse* (cf. Eng. *buxom*), and is well rendered by 'flexibility' ; *Standhaftig-keit* to *steadfastness* and 'constancy' ; with *Gefangniss* (from *fangen*, to take seize), we may compare the elements of *prison* (= *prehension*), Lat. *prensionem* from *prehendere*. In *Be-kannt-schaft* we recognise an exact equivalent of 'acquaintance.' The Romance term comes from a Low Lat. *adcognitare*, a derivative of the theme *gno*, † in *cognosco* and *noscere* which again is cognate with the German *kennen* and *können*, and Eng. *ken* and *can* ; ‡ *un-be-wohn-bar*, 'uninhabitable,' contains a root akin to M. E. *wonen*, to dwell, and Eng. *wont* ; *un-duld-sain*, intolerant, may be compared with Middle English *un-tholiinde*, intolerable ; while

† "In words, forms, and constructions, it is enough unlike English to call forth and exercise all the pupil's power of discrimination, to sharpen his attention to the niceties of word and phrase, and train his philological insight : while at the same time the fundamental relation of German to the most central and intimate part of English makes the study instinct with practical bearings on our own tongue, and equivalent to a historical and comparative study of English itself."—Whitney.

‡ Cf. English *couth*, and Early-English *cuth-lechunge*, acquaintance

*un-ge-duld ig* = impatient, is related to the Older English *un-thulde-liche*, impatiently. §

But a caution is needed here. Words should not be put side-by-side for the mere sake of comparison. Thus, nothing much is to be gained by comparing Germ. *blind*, *hangen*, *Kuh*, with our words *blind*, *hang*, and *cow*. We only get the mere fact of resemblance—but we want something beside this.\* For instance, the comparison may give, as we have seen, laws of sound-change, or older forms. It may also give us more than this. *Sterben* by the side of its English equivalent leads us up to the older meaning of our *starve*, which once had the sense of 'to die.'

The German *Vieh* shows that our work *fee* had once meant cattle, as indeed it does, even in Middle English, in the following passage:—

"Tho herdes [herdsmen] that were wont to be  
On felde, was tho with hor [their] *fe* [cattle]."

*Cursor Mundi*, p. 645, l. 112, T. 42.

The A. S. *feoh*, cattle, preserves the original guttural ; cf. Latin *pecus* and *pecunia*. It is not enough to say that German *finger* and *fang* have their exact analogies in English. We must go further, and show their relation to *fangen* and *fahen*. † (Old Eng. *son*, pt. *feng*, p. p. *gefangen*, to take, seize). German *Zimmer* is akin to English *timber* ; but we cannot say 'to timber.' (A. S. *timbrian*), ‡ to build, German *zimmern*. § *Timber* reminds us of the German *Baum* and English *beam*. The pupil who knows that *m* is a suffix, used to form nouns from verbs, will probably connect *Baum* with *beam*, to build, till. ¶ (With *Bauer*, a peasant, we may compare *boor* (of Dutch origin) and *neigh-bour* ; A. S. *gebur*, a tiller.) All these allied forms carry us back still further, to the ultimate root *bhu*, 'to be.' (Cf. Lat. *fui*, Gr. *phuo*, *phutos*, *phuma*, &c.)

And here etymology becomes inductive, scientific, and historic. But comparative philology is only a luxury for very advanced students. In this as in other branches of instruction, we must be careful not to go over the heads of our pupils, ignoring their age and acquirements. Scientific etymology is not for those who are as yet only acquainted with the rudiments of a foreign tongue, whose grammatical forms are but imperfectly fixed in the memory. To tell a learner, who has overcome the difficulties of French conjugations, that the future tense is an analytic form compounded of the infinitive and a part of *avoir*, is an abuse of etymology and of historical grammar.

There is no lack of good works on scientific etymology and on the historical treatment of English, French, Latin, &c. ; but what is wanted is not new school books, but newer and better methods of instruction. The very best manuals are useless if the teacher be not fully equipped for the work he has undertaken. Out of the full treasury of his knowledge he must bring forth for the benefit of his scholars things old and new ; and his treasury will need frequent replenishing if he would avoid that stagnation which is so fatal to school life, to real intellectual progress, and all true culture.

§ Cf. A. S. *thyld*, *gethyld*, patience ; *gethyldig*, patience ; *thyldian*, to endure ; *geholian*, to bear, suffer, with Germ. *geduld*, *geduldig*, *gedulden*. The A. S. *tholian*, with its Teutonic cognates, are, of course, related to Lat. *tuli*, *tollo*, and *tolero*.

\* So, in English, to compare A. S. *cwealm* with Eng. *qualm* is of little use to the learner ; but to point out its connection with *quell* involves a point of derivation and comparison with other words like *bloom*, *gloom*, *thumb*, *seam*, which contain the same suffix *m*.

† Lat. *pango* and *paciscor*, Gr. *páguumi* are cognates. With German *fähig*, capable, compare Eng. *nimble*, from the old root *nim*, to take.

‡ Elizabethan writers use the phrase 'a well-timber'd man' = a well-built man.

§ Cf. Lat. *domus*, and Gr. *demo*.

¶ Cf. A. S. *danus*, to till, dwell ; *bold*, a home, dwelling ; Eng. *build*.



Mr. Shapcott said that there could be no doubt that the study of etymology formed one of the most fruitful subjects of instruction if treated in the proper way. Children were naturally attracted by the surprises and discoveries which met them in investigating the history of words, and tracing out the chain of connection between such words as Latin *dies* and French *jour*, &c. A real zest was thus added to the pursuit of knowledge.

Mr. Mast entirely agreed with the last speaker, and contended that the method might be employed with as much advantage with very young as with older children. He gave examples to show how much assistance might be derived from a judicious employment of etymology in teaching a foreign language.

Mr. Jenner remarked on the aid which the examination of the meaning and derivation of proper names afforded in the teaching of topographical geography.

Mr. Langler concurred, but gave some amusing examples of the necessity of caution in accepting plausible derivations.

Mr. Baumann showed how much might be done in the etymological explanation of the grammatical forms of language, and particularly of verb inflections, thus fixing apparent irregularities in the memory by association.

The Chairman remarked that it might not be easy to find teachers sufficiently well-equipped to take up the study of etymology in the way indicated by the lecturer. He was strongly of opinion, in direct opposition to the views of a recent writer on education, that language might be made as strictly scientific a study as any of the so-called natural sciences; and that the pupil might be taught to analyse words and phrases with as much advantage in regard to mental training as he would derive from the examination of a fossil or a piece of chalk.

After a few words by Dr. Morris in reply to the various speakers, a vote of thanks to the lecturer concluded the proceedings.—*Educational Times*.

### International Communication by Language.

PHILIP GILBERT HAMERTON.

Among the innumerable progeny of novel ideas and speculations which have owed their origin to modern facilities of communication, is the suggestion which may be met with from time to time in European newspapers, and possibly also in American ones, that men will see so much of each other in the future, and feel so strongly the necessity for means of completer intercourse, as to gradually abandon many of the languages now spoken, confining themselves to two or three of the most highly developed, and finally, perhaps, resting satisfied with one. This idea has arisen at the same time with political conceptions of equal novelty, and of a strikingly similar character. The parallel political theory is that the world will come to consist of a very few great States, which finally, either by friendly agreement or the military predominance of one of them, will place the supreme government of the whole planet in the hands of a single council, perhaps even of a single individual, in whose person will be concentrated the world-power which was the dream of Alexander and Cæsar and Napoleon, yet only partially realized by the mightiest of those three conquerors. There is unquestionably a movement both in politics and in languages which seems to lead in this direction, and to lend some countenance to speculations so apparently

extravagant as these; but at the same time there are tendencies of an exactly opposite character which may have a strongly neutralizing effect, so as to prevent forever the full accomplishment of such results as those just indicated. Thus, although the peoples agglomerate into mighty States, their feelings of nationality are certainly stronger than they were before recent changes. The Italian or German of to-day has feelings of national pride and importance that could not by any possibility have been experienced by the Tuscan or Bavarian of twenty years ago; and even the defeat of France has produced in that country a heat and concentration of national sentiment unknown under the Second Empire. Successes and failures may equally contribute to enhance the strength of national sentiment. The success of the United States in overcoming a great rebellion augmented it, just as the failure of France in a great foreign struggle augmented it also. And it does not follow that because people belonging to the same nationality can join together and form a nation, others who belong to different nationalities can join together and do the same thing, unless by the gradual process which may be called the absorption of immigrants.

If the nationalities remain, the languages will remain along with them. It is possible, no doubt, for a nation to have very powerful national feelings without a language peculiar to itself. It may have been founded by colonists, like the United States, and retain the language of the mother country; or it may be a little country surrounded by large neighbors, and use their languages as Switzerland uses French, German, and Italian, all the while preserving an intense sentiment of nationality though its languages are diverse, and all three of them foreign. But it is difficult to conceive by what arts of persuasion you could induce a great independent State, that has a tongue of its own, to abandon that tongue voluntarily and adopt another in its place, merely in order that there might be fewer languages on the surface of the earth, and less of Babel confusion. A very good argument might be made out for the abandonment of French, for instance. There can not be a doubt that English is at the same time simpler, more copious, and more useful because more widely spread, while its literature is incomparably richer. Whether for purposes of business, or of study or travel, English is a more valuable possession than French. Yet what a hopeless enterprise it would be to persuade the French to abandon the tongue which is their own peculiar inheritance! It is conceivable that if, after 1815, France had been divided like Poland, which she easily might have been, a system of rigorous repression, applied with unrelenting and systematic cruelty, might in the course of ages have stamped the language out, and substituted for it the languages of the conquerors; but it is inconceivable how such a result could ever be brought about by the arguments of linguists. Nor would the time be well chosen just at present to effect similar arguments to Germany and Italy. They owe their unity chiefly to their languages, and are therefore likely to cherish them for ages, the duration of which it is impossible to foresee.

The uneasiness felt in traveling in countries of whose languages we are ignorant has given rise to these speculations about a possible future unity of language, and also to speculations of more modest and practicable proportions about a universal tongue, which, without displacing the languages actually existing, might be learned in addition to them by the educated class of every nation. Some have gone so far as to imagine the possibility of creating an artificial language,



as you might make a lump of artificial stone, and it has been thought that a language created by human ingenuity in this perfectly conscious way would have great advantages in simplicity and consistency, and therefore be much easier to learn. One or two linguists have, we believe, actually attempted the construction of such a tongue, and although the task is one of the most formidable proportions, it may not beyond the capacity of a man with great knowledge of the true laws that have governed the growth of the natural languages. It is probable, however, that if an artificial language were elaborately invented, and adopted by a certain number of clever men, it would be found hard and inflexible, and totally wanting in those rich resources of expression by phraseology which comes from experience alone. Hence the skepticism with which this scheme has generally been regarded by those who were clearly aware of the true nature of language. "You might invent the words," they say, "but you could not invent the thousand happy turns of expression that convey so much more than the words themselves convey." So it is believed most generally, and with good reason, that if any universal medium of communication is felt to be a necessity for mankind, the only practical way to attain it must be to choose some language already existing and make it the common medium of intercourse among men of education everywhere.

This has been done already in a natural, unconscious way. There has never been a formal convention among nations to choose a language for their intercourse, yet for long ages Latin was so employed, and French has since taken its place, though without occupying it entirely. We are certainly worse off in Europe for a medium of general intercourse than were our predecessors in the time of Queen Elizabeth. They all learned Latin at school, in a slow way perhaps, yet in a thorough and scholarly way, and it was a substantial possession for them afterward when they used it for political or literary correspondences; but the Englishman or German of to-day is generally very far indeed from any thing like correct scholarship in French. The new arrangement by which French was adopted in the place of Latin, instead of some other modern language, may possibly have been caused by the linguistic incompetence of the French themselves, which is proverbial in Europe. Their language may have been adopted from necessity, because it was found that their diplomats could learn no other. The ambassador who represented France at Berlin at the outbreak of the last war did not understand German, and was therefore, in a most important and even essential point, actually less qualified for his post than an ordinary newspaper correspondent would have been, or even a commercial traveler. If a modern language is to be selected as the common medium, it is clear that the state of which it is the native tongue will profit by the choice, if indeed we may consider it a benefit to be exempted from a study so useful for the development of the faculties. The German Government appears at one time to have entertained the project of displacing French as the language of diplomacy; but a common medium of some kind is so much of a necessity that the most recent idea is to seek it in modern Greek. This is not so wild an idea as at first sight it may easily appear. We are told that modern Greek. This is not so wild an idea as at first sight it may easily appear. We are told that modern Greek is still near enough to the Greek of Plato for our study of the ancient language to prepare us admirably for the modern one, and most of us who have received what is called a liberal education know something, at least, of the former. Besides this, there is

a steady tendency in Greece itself to ancient forms, just as the best English poets and prose writers of the present day recur affectionately to turns of expression which were considered obsolete by our grand-fathers. But the strongest argument in favor of modern Greek is said to be its perfect adaptability to the expression of new ideas and the nomenclature of new things, in which it is greatly superior to the old common medium, Latin. The wants of general society in a language, with its new sciences and arts, must be vastly more extended than the wants of an ancient body like the Church of Rome, which still uses Latin in some degree as a living language. There are certainly a few Roman Catholic ecclesiastics, we have no means of ascertaining how many, in whose minds Latin is still vigorously alive though not the Latin of Cicero but; even this change in the language is itself a proof of vitality, for there is no permanence in any human speech until it becomes a fossil. Some of these ecclesiastics speak Latin with an astonishing fluency, and write it with great rapidity; but the accomplishment must have been (at least to this degree of perfection) very rare at the Council of the Vatican, or the differences of pronunciation must have rendered it much less useful than might have been expected. The Pope himself uses French most frequently in his personal intercourse with foreigners of all nations, whether laymen or ecclesiastics. The advantage of Greek is that it is habitually spoken by living men, and that it would be so easy to have schools at Athens for language, as the French have one for fine art. These schools would at least settle doubtful points in pronunciation, which always constitute one of the greatest practical hindrances to human intercourse.

There has never been an epoch in history at which international communication was so general as it is to-day, and yet there has never been an epoch so unprovided with a satisfactory means of carrying it on. With his hereditary Latin, and his thoroughly acquired Greek an ancient Roman gentleman could go to any part of the world that he cared to visit, and hold easy intercourse with his equals. The cultivated Italian or Englishman of Queen Elizabeth's time went about talking Latin well enough to converse upon subjects that were worth talking about. Here is a little scene which occurred at the University of Oxford in 1584, when Giordano Bruno visited it. Bruno was beginning to discourse upon the theory of Copernicus, when a certain doctor asked him if he could speak English, and the answer came that Bruno only knew a few of the commonest words. When asked, further, why he gave so little attention to the English language, the Italian philosopher answered at once, "Che gli onorati gentiluomini, coi quali soleva conversare, sapevano tutti parlare o latino o francese o spagnuolo o italiano." And now mark what follows, and think whether our own century could match it or not: "*La conversazione incomincio adunque in Latino.*"

Here are a number of gentlemen, men of the world, and doctors of the university, sitting at their ease round a supper-table, and because a foreign philosopher happens to be present, they all turn the conversation quite readily into Latin, the subjects being the highest speculations of the time, and they go on with the greatest animation. Evidently these men really did possess a medium of communication which is practically lost to us. If we were to attempt, without the most labored preparation, a Latin discussion on the Copernican system, we should find ourselves struggling in such Latinity as that of Lord Dufferin's famous speech at the Icelandic dinner-table. We might use Latia cleverly in

fun, as Lord Dufferin did, but we could not use it in serious earnest for hours together, as those Elizabethan gentlemen did.

The next question that concerns us is whether we possess a substitute for their Latin. There is a general belief that our French is this substitute, and so no doubt it might be if it were learned with any accuracy and thoroughness; but it is surprising how rare is any accurate scholarship in French. Foreigners do not, as a rule, appear to take any pride or pleasure in being delicately accurate in French, although the language fully rewards the student who cares for accuracy, and pursues it. The plain truth is that almost every English gentleman has a contempt for French; and it is not easy to get over such a feeling as this, because it is grounded on the deepest national antipathies. One of the greatest advantages of Latin as a means of general intercourse was that no nation felt any hatred or jealousy of the ancient Romans, whose power had ceased to exist; and there was considerable tact in the proposition to select modern Greek for the same use, since the Greece of our day is much too insignificant a State to excite bitter feelings in the breasts of cultivated foreigners. M. Taine has an anecdote about a French teacher in England, who fished for a compliment by saying to an English gentleman, "You must esteem our language very highly, since you have it taught to your children;" but the Englishman answered with more veracity than politeness, "No, we don't—we despise it." Evan Sam Weller's father, in *Pickwick*, shared this prevalent feeling when he observed that he didn't think much of that language, as Frenchmen who intended to say "water" said "O." There is no such feeling in England about Italian; although whatever objections may be urged against French might with at least equal force be urged against the sister tongue; but Italy is a political pet of England; and France has been much too big and too combative for a pet.

It would be an amusing yet thankless task to trace some of the curious inaccuracies which have had their origin in this contempt. A recent critic has asserted that Alison's *History of Europe* abounds in faults in French. We never read that *History*, but daily experience in English literature in general convinces us that the critic must be right. It is almost inconceivable that any English writer should be able to quote French correctly. Look at our journalism, for instance! It teems with French quotations, and in every quotation there is pretty sure to be one blunder when there are not several, while the ignorance which fails to detect these is accompanied by the keenest contempt for journalists on the other side the Channel who do exactly the same thing with English words and sentences. We remember finding in an English newspaper a most cutting little article on the errors of French journalists, and yet in the very same paper there were six glaring blunders in French orthography or grammar. Some of these errors, in both countries, are merely printers' *errata*; but many others are clearly due to persistent negligence and ignorance. Just as no Frenchman was ever able to spell the Isle of Wight or the Whig Party with any certainty, because the relative positions of the *g* and *h* embarrass him; so the Englishman is liable to make bad shots in matters of accent which in French are of the utmost importance, since they affect both grammar and pronunciation. It is said of French journalists that they can never learn how to spell the names of English public men; but to this day it may be doubted whether any body in England really and firmly knows how to spell the name of the well-known author of the *Vie de Jésus*. Mr.

Matthew Arnold spells it *Rénan*, which is wrong; others spell it *Rènan*, which is equally wrong; a further experiment is still possible, which would be *Rènan*, but that would not be quite right either. In the same way we find *Doré* frequently written *Dore*, quite as great a mistake as if we were to call an Englishman *Door* when his name was *Dorry*; and the town called *Maçon* (famous for its wine) is nearly always written *Macon* by English people, though they would be hard on a Frenchman if he made *York* into *Yorse*. But the mere spelling of a name or the misplacing of a title is a matter of minor importance, and does not necessarily involve gross ignorance of the language. The wonderful and beautiful blunders are those which prove that the writer has no notion how the language is constructed in which he sticks odd bits of it together that can not possibly fit, and throws a whole sentence into irremediable confusion by altering the meaning of some particularly important word that he has utterly failed to understand. Then there are perilous transitions from one language to another, like passing from ship to ship in the open sea. Speaking of Marshal Mac-Mahon, an English writer thought it would look well to finish his leader with a bit of the marshal's own tongue, so he tacked a line of French to the end of his own English in this wise, "the marshal has *s'est suicidé*!" Now how charmingly that little word "has" comes in! See how perfectly innocent the Englishman is of the auxiliary here! But there are wonders beyond these wonders. The enterprise of British journalism does not rest satisfied with mere novelties of verbal arrangement: it enriches the French language itself by the addition of words that no Frenchman ever heard of or even imagined. Thus, instead of saying "horsewoman," one English journalist habitually writes "an *équestrienne*." Mrs. General Baynes, in one of Thackeray's novels, writes to her sister that she finds Hindustani of the greatest use to her in France, for whenever her French runs short she supplements it with that Eastern tongue, which answers the purpose admirably. In our ignorance of Hindustani we infer that "*équestrienne*" must be a Hindu word, for there is no such word in French. On the same principle a London shopkeeper has advertised "*Berceau-nettes*" for many years, which is cockney-French of the most perfect and exquisite description.

It may, however, be very reasonably objected to cases of this kind that although there is nothing to prevent a journalist or a shopkeeper from being highly educated, it does not follow of necessity that he is so. These occupations, it may be urged, being open occupations, do not afford any guarantee of culture, and it is unreasonable to expect uncultivated people to know the language which is the common medium of communication among the learned, whether it be Latin as in Bruno's time, or French as it is supposed to be in our own. But what seems to me most deeply to be regretted is that the *educated* men of the present day do not really and truly possess any certain means of communication with each other; and that in this respect they are so much worse off than their predecessors, such as Milton and Bruno, whose Latin, from thorough preliminary scholarship and incessant practical use, was always an available instrument of expression. Our men of highest culture seem just as liable to inaccuracies in their French as our ordinary journalists and shopkeepers. It is ungracious to name a man of deserved reputation in connection with this topic, but in order not to dwell in vague generalities we will give a specific instance of what we mean. Let us, mention, then, one of the most cultivated men in England, a writer of quite singularly beautiful English, whose mind is a rare example of

delicate and true taste refined and enlightened by extensive knowledge and wide sympathy, Mr. Walter H. Pater, Fellow of Brasenose College, Oxford. Mr. Pater published a book not very long since, containing such French as this: "*La philosophie*," he says, "*c'est la microscope de la pensée*;" and on the very next page he says, "*les hommes sont tous condamnés à morte avec des sursis indéfinis*." Fancy a scholar, fond of quoting, who does not know either his orthography or his genders! We can not think that Milton ever quoted or wrote Latin in this slovenly way. Another English author of reputation gives a list of authorities at the beginning of one of his works, among which we find that he has consulted the "*Catalogue spéciale du section Russe*." The cultivated English of the other sex appear equally liable to these little errors. For example, Mrs. Grote, wife of the distinguished historian, wrote a Life of Ary Scheffer, in which there are several curiosities, and here is one of them. She makes poor Louis Philippe say of the republicans, "*dès qu'on leur montre le bout du corne ils vous tournent le dos*." Now, if that unfortunate sovereign could utter such French as this, what are we to think of the reputation for literary culture which belongs to the House of Orleans?

The French words constantly used in English are often used wrongly. It would be interesting to know the origin of our habit of calling out *encore!* when we wish to hear a piece of music over again. It is just possible that in some bygone age the French may have done this, but certainly no living being ever heard a Frenchman call out anything but "*bis*" on these occasions. Then we have adopted the French word *morale*; but it is never used by Englishmen, never even by the most learned historians, without a blunder. The learned historians say, for example, "Wellington was now determined to carry on the war *à l'outrance*, and the *morale* of his army was excellent." Both these expressions are blunders. *A l'outrance* is bad French; it ought to be *à outrance*; but *morale* used in this sense is still worse. It is hardly possible to imagine a more absurd mistake, and yet it is universally prevalent among English writers. The historians mean to say "the *moral* of the army was excellent," or, in plain English, that the men were in a cheerfully resolute temper; whereas to say that the *morale* of an army is good is to affirm that its theories of morality are sound, or in plain words that the soldiers are convinced that they ought not to commit adultery, etc. *Le moral*, used in this way, means mental firmness, cheerfulness, courage to face difficulties and bear privations without being cast down into low spirits; *la morale* of a body of men means their theory, more or less severe, of moral duty and obligation. Thus a lofty *morale* may exist at the same time and in the same person with a low *morale*. You may be utterly discouraged as to temporal affairs, you may feel quite certain that your worldly position is hopeless, that disease and ruin have you in their clutches for the rest of your days on earth, yet at the same time your *morale* may be of an elevation and purity to gladden the angels in heaven. The converse is also true. Your *moral* may be excellent in the military sense, that is to say, you may be merry under fatigue, and look death in the face with a careless jest on your lips, yet have such a low *morale* that you may see no particular reason for not committing the seven deadly sins on the first seven favorable opportunities. Cromwell's army had both, the ideal knight of the middle ages had both, the armies of Napoleon had one without the other. The two things are so independent that their conjunction or their severance is a favorite subject of the poet and the novelist. You have them together in Sir Galahad, toge-

ther in Scott's great heroine Rebecca, but only one of them in Brian de Bois-Guilbert.

Now to any one who has thoroughly realized the importance of such a distinction as this, the prevalent and constantly recurring blunder of English writers seems evidence that they are outside of French-evidence, consequently, that French is not studied with sufficient accuracy to be a clear medium of communication on moral subjects. How is it possible to discuss such subjects in that language without being aware of so wide a difference in the value of words as that which we have just indicated? And we find the same unfitness to discuss literary questions in French, owing to the habit of first translating French expressions into literal English, and then judging of them by the translation. This process was curiously illustrated by a recent criticism on a living writer, not famous, yet a gifted and delicate poet. There was a line among some very exquisite verses with the words,

"Et l'azur plein de colombes."

The English critic asked his readers if they had ever heard any thing so absurd as "the azure full of pigeons?" and laughed at the author pitilessly. But to a French ear the expression is faultlessly beautiful; it is perfectly descriptive, and thoroughly in accordance with the true genius of the French tongue. The way in which this pernicious habit of translating a foreign tongue into our own and then judging of it by the translation excludes us from the true genius of the language and therefore from any just appreciation of its literature, may be illustrated by a single word, the word *sauvage*. It occurs frequently in French verse and in the best descriptive literature; and now let me show by an anecdote, trifling in itself, yet interesting in this connection, how entirely such a word may be misunderstood. We remember an English officer at a *table d'hôte* who spoke French fluently enough and asked for *canard sauvage*. Then turning to me with a laugh, he said, "How absurd! *sauvage duck!*" Now pray observe how incapable this officer was of entering into the true meaning of the word *sauvage*, or at least of dissociating it from the perverted English meaning of *savage*. The idea of ferocity, as the ferocity of a savage dog, which seemed incongruous and therefore absurd in connection with a duck, is a purely English idea, not belonging to the foreign word at all. Consider the derivation of *sauvage*. It comes from the Provençal *salvage*, then you have it in Italian *selvaggio*, from the Latin *silvaticus*, from *silva*, a wood. And when a Frenchman hears the word "*sauvage*" his mind is transported at once to wild places, such as woods and meres, where wild ducks are often found. Just so a Frenchman calls a wild plant *une plante sauvage*, and quite rightly (a plant of the woods), without suspecting that some English critic may laugh at him for saying that he knows a bank whereon the *sauvage* thyme grows.

It is unnecessary to produce more numerous instances of the sort of misunderstanding which is fatal to perfect literary intercourse in a language that has not been really mastered or assimilated. The position of the average European, not a Frenchman, supposed to be well-educated, may be described in a sentence. His Latin is useless for intercourse from his want of facility and his French from want of accuracy. The absence of a universal means of communication produces the modern polyglot, who knows six languages well enough to order his dinner, but not one of them well enough to employ it in intellectual intercourse. The want of the age is a good common medium, available for all social and intellectual purposes, thoroughly taught to every edu-

cated child from its infancy, and constantly practiced afterward. If, as appears to be the case, our national jealousies and antipathies prevent the hearty adoption of French for this purpose, while the same causes might limit the use of English, it really does seem as if a solution of the difficulty might be found in modern Greek. The first step would be the creation of an international society having for its special purpose the use and development of the common medium of intercourse. We could not hope for the interference of Governments till private association had done its utmost; but in course of time, and in a more enlightened generation than our own, it can scarcely be too much to hope that as education is already considered to be a national question, it may come to be considered an international concern also, and that the Governments of the future may agree in adopting a common means of intercourse for their people, just as in the present day several of them have agreed to adopt a common monetary system. In the course of a single generation, if the leaders of the human race so willed it, all educated men and women might possess a common language in addition to their own national one, and this language would quickly create a literature of its own addressed to every cultivated person on the planet. It would naturally be used for conversation and correspondence among educated people of different countries, not only for intellectual, but even for commercial purposes also.

The one serious difficulty that may be foreseen already, is the difficulty of conveying to students in different countries the exact shade of meaning which a word or an expression should be understood to bear. We already feel this very often in our own language when dealing with subjects that seem to require new and elaborate definitions of old words, and we have to make such definitions afresh in order to prevent misunderstandings which would be sure to arise without them. Every lawyer is familiar with this difficulty, and takes care than not only the general sense of the word, but the special sense that it is to bear in a document, shall be clear settled and explained. Now every language is so closely bound up with national habits and sentiments, that it is extremely difficult to give it a meaning which may be current every where. Let us test this by one or two simple experiments. Try to translate into any other language the expression "it is un-English." The Difficulty in turning this into French is that *Anglais* and *English* do not mean the same thing—there are deep reserves of international hostility, or at least of disapproval, in the word *Anglais*, and equally deep reserves of national pride and self-complacency in the word *English*. "*Une jeune fille Anglaise*" does not mean what "an English girl" means—the French expression includes a reserve of disapproval concerning what seems an outrageous amount of liberty accorded to the bold young creature in question: the English expression has not the slightest reserve of that kind, but is full of pride and praise. "*A Frenchwoman*" in England is generally understood to mean an adulteress—*une Française* means an elegant and agreeable person who knows how to dress neatly and talk well. "*A French girl*" implies as strong suspicion about morals and religion—"*une jeune fille*" implies the most absolute confidence in an ideal purity and faith. So you can not translate *clergyman* into French—*prêtre* conveys a wholly different idea, as, in another way, does *pasteur*. You cannot translate *House of Commons* into French; the French newspapers always translate it *Chambre des Communes*, which, though near in sound, is as wrong as it possibly can be, for we have no *communes* at all in England, the English borough being quite a different thing, while

many members of the House of Commons are elected by the counties. Besides, the French expression misses the central idea of the English one, which is that the men elected are *common* men, that is to say, not peers of the realm. Any attempt to explain to a Frenchman the shade of meaning implied by the word "commoner" would be futile; we need the familiarity with national tradition to perceive it. And all this its strictly reciprocal. There are just as many instances in which national habits and traditions make French expressions unintelligible out of France. Alexandre Dumas wrote a play lately, called *Monsieur Alphonse*. Now surely this looks simple enough, but it is not so simple as it looks. Several Italian journals tried to explain the meaning of *Monsieur* as used here in full before the Christian name, but they made some very wide shots indeed. Every Frenchman, when he sees "*Monsieur Alphonse*" advertised on the walls, seizes at a glance what Dumas intended to convey, but how explain it to a foreigner? And yet every foreigner thinks he knows what *Monsieur* means.

It might be thought, however, that with reference to matters more closely connected with the higher culture, language might have a meaning more generally accepted and understood. Yet even here the same difficulty presents itself. An excellent instance of this occurred in a speech of Mr. Lowe, when he was Chancellor of the Exchequer in Mr. Gladstone's administration. He was speaking of universities, and he said, with his usual *brusquerie* of manner, "People talk of the French university—there is no such thing as a university in France." Mr. Lowe was quite right in what he actually said, for as he used the English word he might fairly argue that there is nothing in France answering to the English conception of a university. But Mr. Lowe was far from being so near the truth in what he thought, and in what he conveyed to his audience, which was that the French in saying that they had an "université" advanced claims that could not be supported. The word in the English sense means a large group of magnificent colleges and halls, with beautiful gardens, libraries, museums, and immense wealth to sustain them, clustered together in or about some quiet rural town, and frequented by young men who have finished their school-days, and pursue, or are supposed to pursue the highest studies with the help of the most cultivated teachers in the country. It is perfectly true that there is nothing of this kind in France. The word in the French sense means a vast universal system of public instruction, with great cheap public schools scattered all over the land, but all pursuing the same methods, and a number of *faculties* for examination in some of the principal towns, the whole organization governed by the Minister of Public Instruction. There is nothing of this kind in England, and a Frenchman might say with truth, in answer to Mr. Lowe: "*Il n'y a pas d'université en Angleterre.*" At the same time, and for the same reason, the word "professor" has not the same sense in its English and French forms. A "Professor" in England means a distinguished scholar who has accepted a highly honorable position in one of the universities, where he gives some of the results of his scholarship to an audience prepared to receive them. "Un professeur" means a wretchedly paid teacher in a cheap school, who lives in mortal dread of a superior officer in the same building, and who has, generally speaking, no position whatever in the society of the place he lives in. And now we see the difficulty of using another language; for if we say of an English university professor, "*il est dans l'université il est professeur,*" we convey the idea that he holds a position

much inferior to that of an usher in an English grammar-school; and yet we are not speaking a language supposed to be generally unintelligible, we are not speaking the language of some tribe in the heart of Africa, we are speaking French, which is said to be the universal medium of communication for cultivated people all over the civilized world,

While fully admitting the importance of this difficulty we may, however, observe that the tendency of modern life is to place things more and more at the disposal of people in different countries, so that if one country has any decidedly good thing, the others are pretty sure to adopt it before long. A language may be truly universal when the things it speaks of are universal. The words "sun," "moon," "stars," might be learned every where with their exact meaning; the word "baronet" can only be accurately understood by some one who has lived in English society and seen exactly what the title is worth. Now it is scarcely too much to say that every year makes things more in common among nations. The spread of the railway system is one of the most obvious instances of this; but there are many others. All words relating to railways would be really and truly understood by people in different countries; and so would the words that belonged to the use of telegraphs. Every thing relating to science would be clearly understood in the universal language; and as it is said that the "pencil speaks the tongue of every land," so the universal language ought to be generally intelligible on matters connected with the fine arts, at least to those to whom the fine arts themselves are intelligible. War and commerce, being international affairs, might be equally well understood in the universal language.

Whatever may be the objections and the difficulties, the firm and decided choice of some language for international communication would assuredly lead to a more enduring condition of things than the present state of international dumbness or misunderstanding. Consider the wretched business which is called traveling in these days. People set off for foreign countries, and when they get there learn no more about the inhabitants than just what may be seen with the bodily eyes, having no communication with the *minds* of foreigners. The English and Americans are accomplished masters in the art of getting through foreign countries with the least risk of contamination from contact with any educated natives. Men of culture did not travel so in Bruno's time; Montaigne did not travel so; Milton did not travel so. They went to see and converse with the best and most accomplished men; the modern tourist goes to stare at a big mountain from the window of a big hotel, and talks only to his fellow-countrymen, or to native innkeepers and waiters who know his own language better than he knows theirs. Even the men of culture in the present day are much more isolated than Milton and Bruno were, and too frequently find themselves compelled to travel in the ordinary tourist fashion, seeing Switzerland, but not the Swiss; Italy, but not the Italians; if indeed Switzerland and Italy are any thing but so much physical geography unless you know the people who give them life.—(From *Atlas Series*, No. 9, published by A. S. Barnes & Co., New York.

### The Colleges of the United States.

We have already mentioned in the columns of this journal the "Handbook of the Requirements for admission to the Colleges of the United States" compiled by

Mr. Nightingale, Principal of the Lake View High School, Ravenswood, near Chicago. We have thought that it might be interesting to Canadian educators and students to give such a summary of the important information which the author has collected as might afford some means of comparing the American with our own Collegiate institutions. The chief aim of the work, as may be gathered from the title, is to present in a handy form the degree of proficiency in various branches of knowledge necessary for entrance to the several courses of the leading Colleges of the Republic. Mr. Nightingale has chosen 44 institutions out of the whole number of 422 Universities and Colleges to form an average of such requirements; but he wishes it to be distinctly understood that his selection does not imply any inferiority in the establishments omitted. A full list of the whole number (422) is also given, so that the reader has an opportunity of forming a judgment on this point himself, after making the necessary inquiries. As marking progress in a certain direction, it may be here stated that, with the exception of the Roman Catholic Colleges (67), none of which admit ladies, 183 institutions, or 52 per cent., admit both sexes. Of the whole number (422) 20 are in the New England States, 91 in the Middle States (including the District of Columbia), 58 in the South-Eastern States, 127 in the North-Central States, east of the Mississippi; 59 in the North-Central, west of that river; 37 in the South-Central, and 30 in the Western States. Altogether they are, east of the Mississippi, 316; west of it, 106. With regard to church control, 67 (as already stated) are under Roman Catholic authority, 65 belongs to the various branches of American Methodism, 51 are Baptist (44 being set down simply as such, the remainder representing minor sects), 44 are Presbyterian (30 bearing that name only—6 being United, 6 Cumberland, and 2 Southern Presbyterian), 25 are Congregationalist, 16 Protestant Episcopal, 17 Lutheran, 15 Christian, 5 Universalist, 7 United Brethren, 2 Unitarian, 5 Friends, 3 German Reformed, 5 Dutch Reformed; Congregationalist and Presbyterian (combined), Moravian, New Church, Jewish and Masonic, 1 each; 1 is municipal, 27 are State Universities, 48 are characterized as non-sectarian, and 12 (which must be new or obscure) as unknown.

Of the 44 institutions which Mr. Nightingale has selected as representatives, 17, or the one-fourth, were founded before the close of the last century; 8 before the separation of the colonies from England; 6 before Canada became permanently a British possession; 2 before the close of the 17th century, and one, four years before the foundation of the city of Montreal, and thirty years later than that of Quebec. The names of these more or less venerable institutions, with the dates of their foundation, are Harvard (1638), William and Mary's (1693, Virginia), Yale (1701, Connecticut), Princeton (1746, N. J.), Washington and Lee (1749, Virginia), Columbia (1754, New York City), Brown (1764, R. I.), Dartmouth (1769, N. H.), Williams (1893, Mass.), Union (1795, N. Y.), and Middlebury (1779, Vt. The following eleven range in date of foundation 1802 (Bowdoin Maine) to 183s (Oberlin, Ohio). Of the remainder all but there were founded since the beginning of the year 1850, and we have little doubt but within the same period of less than a single generation are comprehended the birth times of the great majority of the 422 already spoken of. Of the 44 representative seats of learning, 23 are exclusively gentlemen's colleges; 18 admit both sexes and three (Vassar, Wellesly and Smith) are exclusively devoted to the education of ladies. Of the first of these classes, however, Harvard has examinations



for female students, and Yale admits ladies to its School of Fine Arts. It is noted as a significant fact that all the State Universities (27 in number) and all the Methodist Colleges (65 in number) admit both the sexes.

We will now give a short account of the entrance or matriculation examinations of the 44 colleges. We may premise that, although Mr. Nightingale states that few of them are sectarian in practice, the most of them were established under the influence and protection of some religious denomination. Sixteen or more than a third, however, are (and with the exception of William and Mary, which comparatively recently was Episcopalian) have always been non-sectarian. Of the remainder nine are Methodist; seven, Congregationalist; four, Baptist; three, Presbyterian; three, Episcopalian; one, Roman Catholic, and one, Universalist. As to authors specified and the portions of them required, no two of them, entirely agree. In the main, nevertheless, the average of three or four of them may be regarded as the average of them all. For this purpose, let us place side by side the subject appointed for the matriculation of a few of the colleges. Let us take Yale, for instance, the John Hopkins University of Baltimore, Trinity College, Hartford, Conn., Princeton College, Vt., and Notre Dame University, Indiana. In Yale there are (in what is or is equivalent to the Faculty of Arts) two courses, a classical and a scientific. For matriculation in the former there are required four books of Cæsar's Commentaries, six books of Virgil's *Æneid*, with the *Bucolics* and *Georgics*, seven orations of Cicero, twelve chapters of Arnold's Latin composition, four books of Xenophon's *Anabasis*, three books of Homer (which work not specified), Jones' or White Greek Prose Composition, Loomis' Algebra to Logarithms, two books of Euclid's *Plane Geometry* or their equivalent, *English Grammar*, *Geography*, *Arithmetic* (including metric system), *Greek History*. For the science course six books of Cæsar and twelve chapters of Arnold are required, and a more extended knowledge of Mathematics and English. Yale has colleges (or faculties of law, theology, medicine, a school of fine arts (as already mentioned), and a *post-graduate course*. The John Hopkins University (founded in 1876) has also two courses—a classical and scientific. In both the same Latin is required for admission, namely, for books of Cæsar, 2,500 verses of Ovid, five books of the *Æneid*, the 21st book of Livy, seven orations of Cicero, two books of Horace's *Odes* and Harkness Latin Prose Composition.

The requirements in Greek (for which, in the scientific course, French and German, that is, *ability to read and write them*, are substituted) are three books of the *Anabasis*, the 8th book of Herodotus, three books of Homer, "Medea" or some other play of Euripides, and Jones' Greek Composition. In the remaining studies the qualifications are the same in both courses, viz., Todhunter's Algebra, chap. 138; in geometry, Chauvenet's nine books, and the minimum course of Howison's analytical geometry, and in English ordinary branches, arithmetic (with metric system), ancient history and geography, Greek and Roman antiquities, and either botany, natural philosophy or physical geography. This University maintains extended courses beyond the regular college curriculum, numerous lectures and unusual laboratory facilities. It will be remembered that Professor Huxley delivered one of his celebrated American lectures at its inauguration. At Trinity College, Hartford, (Episcopalian) the requirements for entrance in all the courses are six books of Cæsar, six of Virgil's *Æneid*, with the *Eclogues* and one *Georgic*, seven orations of Cicero, including the one *pro lege Manilia*, twelve chapters Arnold's composition, five books of the *Anabasis*, two books of the Homer, Arnold's Greek Prose,

Loomis' Algebra through Quadratics, Loomis' Plane Geometry, and the full number of English branches. At Princeton there are two courses, classical and scientific. For the latter three books of Cæsar, and two of the *Æneid* are required; for the classical five books of Cæsar, Sallust's *Catiline* or *Jugurtha*, six books of the *Æneid*, six orations of Cicero, first twelve chapters of Arnold's Latin Prose, three books of the *Anabasis*, two of Homer and the first thirty exercises of Arnold's Greek Prose. For both courses, Algebra through Quadratics of one unknown quantity, the first book of Euclid's *Elements* or equivalent, with the common English branches, are required. As generally usual, arithmetic includes the metric system. Middlebury (Vt.) prescribes for all courses, four books of Cæsar, six of the *Æneid* with the *Bucolics*, six chapters of Arnold's Latin Prose, three books of the *Anabasis*, two of Homer, Jones' Greek Prose, Algebra through the quadratics, three books of Doomis's Geometry and the English branches. Notre Dame University, of Notre Dame, Indiana, the only Roman Catholic institution in the selected list of 44 colleges, has two courses. In the scientific no classics seem to be demanded, but a good knowledge of French or German is required. For the classical course the qualifications are two books of Cæsar, five biographies of Cornelius Nepos, St. Jerome's *Life of Arnold's* (instead of Cicero), fifty of Arnold's Exercises, three books of the *Anabasis*, simple exercises in Greek prose, Algebra (Robinson's University) as far as series, plane geometry, common English branches, with arithmetic including metric system. We would be glad to select a few more of the entrance requirements from Mr. Nightingale's carefully compiled catalogue, but what we have given will enable the reader to form an idea of what is the average, the six chosen pretty fairly representing the divergences of the whole. We leave to our readers themselves the task of comparing the standards of qualification recited with those set up in our own colleges and universities. Of course, with United States examiners as with our own there is room for a departure in all cases from the letter in favor of the spirit of the standard—accurate knowledge of a less, always taking precedence of a superficial acquaintance with a greater number or extent of studies. There are a few matters of importance in this valuable work to which we may take another opportunity of referring. In the meantime we will close these comments by a statement of a fact which cannot but have an interest for all teachers of Latin. Of the 44 Colleges here chosen to form an average of requirements, 18 retain what is known as the language, while 22 have thought it wise to adopt the Roman, one (Notre Dame) adheres to what we are accustomed to call the Continental, and the remainder seem to be still in a state of indecision. The Roman is a complete system, based on the investigation of eminent philologists, who claim for it a near likeness to the pronunciation in use in the days of Cicero. Many, who would otherwise favor it, are prejudiced against it from the peculiar effect of the "g" and "c" being always hard as in Greek. In the Continental which is the mode employed in our French Canadian schools and colleges these and other consonants are sounded in conformity with the *genesi* of the language of the teacher or learner. The English system is familiar to most Canadian students. It preserves, for the most part, the English sound of both vowels and consonants. The Roman has the merit of consistency and, if generally adopted (even with some modifications), would tend to make Latin once more a living language. Many Englishmen, educated in their country's traditional method, have been induced by the reasoning of the philologists to exchange it for the Roman.—*Montreal Gazette*.



## POETRY.

**The Old School Book**

What pleasant memories cluster round these volumes old and worn,  
With covers smirched, and bindings creased, and pages thumbed  
and torn!

These are the books we used to con, I and poor brother Will,  
When we were boys together in the school-house on the hill.

Well I recall the nights at home, when side by side we sat  
Before the fire, and o'er these books indulged in whispered chat!  
And how, when father chided us for idling time away,  
Our eyes bent to the task as though they'd never been astray.

The old-time proverbs scribbled here, the caution to beware,  
"Steal not this book, my honest friend," scrawled, roughly here  
and there:

The blurs, the blots, the luncheon spots, the numberless dog's ears,  
The faded names, the pictures, and, alas! the stains of tears—

All take me back in mind to days when cloudless was the sky,  
When grief was so short-lived I smiled before my tears were dry;  
When next to father's angry frown I feared the awful nod  
That doomed me, trembling, to advance and bow beneath the rod.

How bright those days! Our little cares, our momentary fears,  
And e'en our pains, they vanished with a burst of sobs and tears!  
And every joy seemed great enough to balance all our woe;  
What pity that when griefs are real they can't be balanced so.

The school-house stands in ruins now, the boys have scattered wide,  
A few are old and gray like me, but nearly all have died;  
And brother Will is one of these; his curly head was laid  
Down by the brook, at father's side, beneath the willow's shade.

These books, so quaint and queer to you, to me are living things:  
Each has its story of the past, and each a message brings;  
Whene'er I sit at eventide, and turn their pages o'er,  
They seem to speak in tones that thrilled my heart in days of yore.

—(The Teacher.)

## OFFICIAL NOTICES.

**Department of Public Instruction.****SCHOOL MUNICIPALITIES.**

His Excellency the Lieutenant-Governor has been pleased, by order in council, dated the 29th of April last 1879, and in virtue of the powers conferred on him, to detach from the township of Lingwick and annex to the township of Hampden, in the county of Compton, for school purposes, the following ranges and lots of land, namely:

Victoria Road range	I, Lots	1, 2 and 3.
" " " "	II, " "	1, 2, 3 and A.
" " " "	C, " "	37 to 44 inclusive.
" " " "	D, " "	37 to 44 "
" " " "	I, " "	11 to 18 "
" " " "	II, " "	11 to 18 "

Notice of application to erect, annex, bound, &c., &c., school municipalities, under the 5th sect., 41st Vict., chap. 6.

To erect into a distinct school municipality the parish of Saint Joseph de Sorel, detached from the parish of Saint Pierre de Sorel, with the limits as those assigned to it for civil purposes

To detach from the town of Saint Henri, and to be annexed to the municipality of the village of Notre Dame de Grâces, for school purposes the following territory: Being of an irregular figure, abutted and bounded as follows, that is to say:

at one end towards the south west by the municipality of Notre Dame de Grâces, on one side towards the north west by the said municipality, and on the other side towards the south east by the remainder of the town of Saint Henri, as defined by a line running as follows: commencing at the north west boundary of the city of Montreal, at the center of Saint Antoine street, and following along the center of said street in a south westerly direction to its intersection with Hallowell street; in a north westerly direction to the north western limit of the lands belonging to the Colonial Building and Investment Association; thence in a south westerly direction along the said limit of the said lands, and also along the north western boundary of Mr. William Samuel's property to Bethune street; thence in the direct prolongation of the last mentioned line to the north east boundary of said municipality, being on the division line separating the said town of Saint Henri from Côteau Saint Pierre. The whole as represented on the plan and in the description prepared by Joseph Rielle, provincial land surveyor, dated at Montreal, the eighth day of November, in the year of Our Lord, one thousand eight hundred and seventy six, of record in the department of the Provincial Secretary.

By order in council, dated the 14 of May last, 1879:

To erect into a school municipality the parish of l'Annonciation du Lac des deux Montagnes, in the county of Two Mountains, with the boundaries assigned to it for civil purposes.

To erect into a distinct school municipality the parish of Saint Jean Baptiste d'Emberton, (detached from the municipality of Ditton and Emberton), in the county of Compton, with the limits which are assigned to it for religious purposes.

**SCHOOL COMMISSIONER.**

His Excellency the Lieutenant-Governor has been pleased by order in council, dated the 14th of May last, 1879, and in virtue of the powers conferred on him to make the following appointment of a school commissioner, to wit:

County of Pontiac, Litchfield, Mr. Alpine Campbell, vice Mr. John Scott, who has definitely left the municipality.

**Copy of Minutes of Proceedings of a Meeting of the Protestant Committee of the Council of Public Instruction held on Wednesday the 28th May 1879.**

EDUCATION OFFICE, QUEBEC,  
28th May 1879.

Which day the quarterly meeting of the Protestant Committee of the Council of Public Instruction was held: Present: The Lord Bishop of Quebec, Principal Dawson, L. L. D., F. R. S., &c., Dr. Cameron, M. P. P., The Hon. L. R. Church, R. W. Heneker, Esq., The Hon. Judge Dunkin, The Hon. J. Ferrier, and The Hon. G. Ouimet, Superintendent of Public Instruction.

The Hon. Judge Dunkin was requested to act as chairman of the meeting.

The minutes of former meeting were read and confirmed.

The Hon. The Superintendent of Public Instruction stated, that, by an order in Council dated the 26th 1879, The Right Reverend William Bennett Bond, Lord Bishop of Montreal was appointed a member of the Council of Public Instruction.

A letter was read from James G. Black, Esq., Chairman of Board of Trustees, Thurso, Ottawa County, P. Q., setting forth the present state of the school there, the subjects taught, and the intention of the trustees to make it a first class graded

Academy and asking a grant from the Fund for Superior Education. The Secretary was instructed to write Mr. Black, that the usual returns must be made to the Department of Public Instruction, and that the claims of said school at Thurso would be considered when the distribution of the fund for Superior Education was made on the 4th September next.

A letter from Dr. Cornish, President. Board of Examiners, Montreal, regarding the recent examinations there for teachers' diplomas, and the granting of an academy diploma to Mr. F. S. Haight, M. A., teacher, Montreal, having been laid before the Committee, it was resolved :

"That the teacher referred to by Montreal Board be passed as recommended."

"That the Montreal Board be authorized to grant a diploma for an Academy to Mr. Haight on such examination as they may deem necessary."

"That the Secretary in concert with Dr. Cornish be authorized to select from the published list some elementary work on Book-Keeping and the use of the Globes for the examination of Model School Teachers and to advertise the same, and also that the Linear Drawing be restricted to Freehand Drawing as in one of Smith's Elementary Books."

A letter from Gerald H. Brabazon, Esq., Secretary, Board of Examiners, Pontiac regarding the recent examination for Teachers' Diplomas held at Portage du Fort, having been laid before the Committee, it was resolved :

"That the teacher referred to by Pontiac board be passed as recommended."

A letter from Mr. Forde, Teacher, Model School, Clarendon, complaining of the action of the Pontiac Board of Examiners at the late examination by said Board for Teachers' Diplomas, was referred to the Hon. The Superintendent of Public Instruction for enquiry, and to report thereon at next meeting.

On the motion of The Hon. L. R. Church, it was resolved :

"That Bolton McGrath be requested to visit and report specially upon, the character of the work being done in the Clarendon Schools and Portage du Fort, and the relative efficiency of each and the claims of each to a grant from the Superior Education Fund."

The Reports of Messrs. Emberson and Weir, Inspectors of Academies and Model Schools were read, and tabular returns of their inspection laid on the table.

The Lord Bishop of Quebec on behalf of the Sub-Committee which had examined these returns presented a written report, recommending in addition to other matter that the Committee should settle the classification for grants, Mr. Heneker one of the Sub-Committee gave verbal explanations of the method adopted in preparing the returns. As the question seemed to involve difficulty, it was, on the motion of the Hon. James Ferrier, seconded by Dr. Church, resolved :

"That the reports and returns of the Inspectors of Academies and Model Schools be referred back to

the same Sub-Committee, viz : R. W. Heneker, Esq., the Lord Bishop of Quebec, and Dr. Dawson, with instructions to prepare a classified list of the Academies and Model Schools for the final approval of this Committee at its next session."

On the motion of the Lord Bishop of Quebec, it was resolved :

"That the Sub-Committee above named be requested to report on the advisability of establishing a uniform set of text-books in all Model Schools and Academies, and to recommend, if they deem the project feasible and advisable, a series of text books for the information of the Committee."

"That the same Sub-Committee be instructed to prepare a form for the tabulation of the results of Inspectors' reports."

Mr. Heneker reported verbally that he had received from the Hon. the Superintendent of Public Instruction a statement of the moneys at the disposal of the Council, and that he wished to examine the same and report thereon at the next meeting. It was agreed to receive the statement after examination by Mr. Heneker.

There was laid before the Committee a communication from the School Commissioners of the Village of Dunham, intimating their intention of establishing in the said Village of Dunham, a first class graded school, and of guaranteeing a thousand dollars for its support, and soliciting a grant of four hundred dollars from the Fund for Superior Education. The Secretary was instructed to say in reply :

"That the request is under consideration of the Committee with every desire to encourage the laudable effort being made by the trustees, but that, until the meeting in September, it cannot give any definite assurance as to the amount of the grant."

It was Resolved :—

"That the next meeting of the Committee be held on Thursday the 4th September."

It was Resolved :—

"That the Committee on Medical Matriculation be instructed to bring the following suggestions for legislation in amendment of the Medical Act under the notice as well of the Government as of the College of Physicians and Surgeons, with the urgent request that attention be given to the same, and that Drs. Cameron and Church be added to that Committee."

#### RECOMMENDATIONS FOR LEGISLATION

(1). That any Bachelor of Arts of any British or Canadian University on presenting his Diploma and paying the usual Examination Fee shall be exempted from the Matriculation Examination of the College of Physicians and Surgeons, and shall be duly enregistered as a Student in Medicine.

(2). That any student having matriculated in Medicine in any University in the Province of Quebec, shall, in like manner, be exempted, provided that the subjects of examination in such University shall have been previously submitted to the Council

of the College of Physicians and Surgeons and approved thereby.

The Committee are requested also to confer with the Superintendent of Education, and the Sub-Committee of the Catholic Committee, and such other bodies as may be necessary, with reference to similar provisions as to entrance on the study of the Legal, Notarial and other Professions.

The accounts of the Contingent Fund were examined together with the vouchers and found correct, the balance at the Credit of the Committee in the Montreal Bank being nine hundred and eighty five dollars forty two cents (\$985.42).

The Secretary's account for Incidental Expenses from 6th December 1878 to date amounting to \$6.92 was ordered to be paid. Accounts of Inspectors' travelling expenses in inspecting Academies and Model Schools, having been laid before the Committee, were ordered to be handed to the Hon. the Superintendent of Public Instruction for payment.

It was agreed :—

“That this Committee would call attention to the provision on the part of the Dominion Government in aid of Military drill in the Colleges, Academies and Schools, and would recommend to the Principals or Trustees of such Institutions to place themselves in communication with the Department of Militia on the subject.”

The following statement with accompanying letter from the Auditor General of the Dominion regarding the arrears of Marriage License Fees was obtained at Ottawa through the Hon. James Ferrier.

MARRIAGE LICENSES,—QUEBEC.

	Receipts.	* Expenditure.
1867-68.....	\$ 3,676.....	\$ 180.02
69.....	3,159.....	270.08
70.....	3,074.....	134.37
71.....	3,339.....	149.01
72.....	2,500.....	202.04
73.....	1,139.....	94.97
	<hr/>	<hr/>
	16,887	1,030.49

Copy-Letter.

Ottawa, May 7th 1879.

Dear Sir,

I enclose a statement which may be of some service with reference to your enquiry of this morning.

Your truly,

(Signed) J. L. McDougall.

Addressed to

Hon. JAMES FERRIER,  
Senate.

It was Resolved :—

“That Mr. Ferrier, Dr. Cameron, Dr. Church, and Mr. Lynch be a Committee to confer with the Local

\* Expenditure means cost of collection only.

Government, and otherwise act as they may deem advisable with a view to the means of obtaining for the use of Protestant Education in connection with this Committee, the sum of arrears of Marriage License Fees from 1867 to 1873 inclusive now in the hands of the Dominion Government.”

University School Examinations.

The following is the standing of candidates at the annual University examinations, held under the superintendence of McGill University, Montreal, and Bishop's College Lennoxville :

ASSOCIATION IN ARTS.

- James Charles Allan, High School, Montreal, 1,157 marks.
- Charles Edward Bland, High School, Montreal, 1,140.
- George W. Hambley, Coll. Inst., Hamilton, 1,012.
- John C. Fields, Coll. Inst., Hamilton, 929.
- R. Norman Hudspeth, Coll. Inst., Hamilton, 915.
- Louisa McDonald, Coll. Inst., Hamilton, 859.
- Wyatt G. Johnston, Bishop's Coll. School, Lennoxville, 851.
- Robert Little, Coll. Inst., Hamilton, 846.
- Henry J. H. Petry, Bishop's Coll. School, Lennoxville, 843.
- Edward J. K. Noyes, High School, Montreal, 829.
- Edith Durdan, Coll. Inst., Hamilton, 813.
- Adolph Kraft, Coll. Inst., Hamilton, 796.
- Richard F. Morris, Bishop's Coll. School, Lennoxville, 785.
- William Morris, Bishop's Coll. School, Lennoxville, 784.
- Duncan D. McTaggart, High School, Montreal, 764.
- Archibald McK. McMechan, Coll. Inst., Hamilton, 763.
- Donald John Fraser, High School, Montreal, 746.
- John Coutts, Coll. Inst., Hamilton, 738.
- Thomas Crawford, Coll. Inst., Hamilton, 734.
- Jessie McConnell, Lachute Coll., 723.
- Devereux Emmet, Bishop's Coll. School, Lennoxville, 688.
- Alfred E. A. Barlow, High School, Montreal, 682.
- William L. Murray, High School, Montreal, 611.
- Claude L. Wheeler, High School, Montreal, 676.
- Charles McP. Holt, Bishop's Coll. School, Lennoxville, 654.
- Maggie Osgood, Girls' High School, Montreal, 644.
- George S. Baker, Dunham Academy, 630.
- Arthur G. Weld, Bishop's College School, Lennoxville, 616.
- Elizabeth Smith, Coll. Inst., Hamilton, 678.
- Christiana J. Galt, Girls' High School, Montreal, 597.
- George R. Mills, Dunham Academy, 593.
- Alexander Malcolmson, Coll. Inst., Hamilton, 590.
- Thomas, J. Tait, High School, Montreal, 515.
- Kenneth D. Young, High School, Montreal, 430.
- Albert W. Haldiman, High School, Montreal, 369.

JUNIOR CERTIFICATES.

- Margaret McCoy, Coll. Inst., Hamilton, 715.
- Ina Sutherland, Coll. Inst., Hamilton, 685.
- Hattie Dalley, Coll. Inst., Hamilton, 627.
- Grace Darling, Senior School, Montreal, 571.
- Margaret Wilson, Senior School, Montreal, 496.
- Augusta Pedersen, Stnior School, Montreal, 492.
- George Cory Thomson, Coll. Inst., Hamilton, 480.
- Georgina Iles, Senior School, Montreal, 461.
- Mary Mitchell, Senior School, Montreal, 425.
- Nathan Mercer, Berthier Academy, 387.

## MISCELLANY.

*Varieties.*—The following specimens are reported from the work of the pupils in the London public schools. They could be easily matched in America:

"Where is Turkey?"

"Turkey is the capital of Norfolk."

"Where is Turin?"

"Tureen is the cappittal of Chiner, the peepul there lives on burds nests and has long tails."

"Gibberralter is the principal town in Rooshia."

"What do you know of the patriarch Abraham?"

"He was the father of Lot and had few wives—wun was called Hishmale and t'uther Haygur. He kept wun at home and he turned the t'other into the desert, when she became a pillow of salt in the day time and a pillow of fire at nite."

"What do yon know of Joseph?"

"He wore a coat of many garments. He were chief butler for Faro, and told his dreams. He married Potiffer's dorter, and he led the Gypshans out of bondage to Kana in Gallilee, and then fell on his sword and died, in the site of the promiss land."

"Give the names of the books of the Old Testament?"

"Devenshire, Exeter, Littikus, Numbers, Stronomy, Jupiter, Judges, Ruth," etc.

"What is a miracle?"

"Don't know."

"If you saw [the sun shining overhead at midnight, what would you call it?"

"The moon."

"But if you were told it was the sun?"

"I should say it was a lie."

Another boy, giving his impressions in regard to Moses, wrote as follows:

"He was an Egepshin. He lived in a bark maid of bull rushers, and he kep a golden calf, and worship braizen snakes, and he het nuthin but kwales and manner for forty year. He was kort by the air of his ed while riding under the bow of a tree, and he was killed by his Abslon, as he was a-hanging from the bow. His end was pease."

"What is meant by conscience?" said a schoolmaster to his class. The almost simultaneous reply of half the number was: "A hinward monitor."

An inspector who happened to be present inquired: "And what do you understand by a monitor?"

To this an intelligent youth exultingly answered: "A hironclad."

Every teacher will recognize in these answers the confusion of ideas, and the mistaking of names for things which all pupils fall into, and out of which there is no means of getting them, except by patiently correcting the errors they make while endeavoring to put their knowledge into a definite shape on paper.—*New Engl. Journ. of Education.*

—A few Sundays ago a Methodist local preacher in South Durham startled and amused his cengregation with the following new reading of a well-know text: "The cock wept and Peter went out and crew bitterly!"—*Christian Advocate.*

—The mind and the heart are like a house in which we take lodgers. They may be honest and quiet, or, on the other hand, noisy and destructive, seeking only to spoil the dwelling which receives them. Let us beware, then, of the ideas to which we give hospitality; let us not pick them at random from any book or journal which, once admitted, is dislodged only with great difficulty.—*Golden Sands.*

—Would'st thou know what lesson hums the bee  
With dapper wings unfurled?

Translated means the sweet bees hum,  
"Bees-hum-thing in the world."

*Tardiness.*—In the measures adopted to decrease cases of tardiness in school, care should be taken that the offence of an unnecessary tardiness be not considered by the pupils greater than that of an unnecessary absence. When pupils on their way to school find themselves to be tardy, and return, preferring to be absent the entire session rather than face the

disapprobation of the teacher, the offense of tardiness has been relatively too much emphasized. The record of a school for the month that shows no tardinesses and many absences, is circumstantial evidence that the teacher, although successful in preventing tardiness, has forced her pupils into the greater evil of absence. Pupils are wanted in school during the entire session; but two hours as compared to three is certainly better than absence.—*Supt. Aaron Gove, Denver, Col.*

*Cheerfulness.*—Charles Lamb said that a laugh was worth a thousand groans in any state of the market. Hume said "he would rather possess a cheerful disposition than with a gloomy mind to be the master of an estate of £10,000 a year." Cheerful teachers make cheerful scholars, and both not only do more and better work, but do it with less friction and less strain to physical or mental powers. Cheerfulness in a schoolroom is worth more than costly furniture and liberal appointments. A grumbling, whining, fault-finding teacher, forever complaining of the natural disposition of youth, is out of place in a room which should be filled with the sunshine of cheerful faces and happy hearts.—*La. Journal of Ed.*

*Wrong End First.*—In these times the educational tree seems to have its roots in the air, its leaves and flowers in the ground; and I confess that I should like very much to turn it upside down, so that its roots might be solidly imbedded among the facts of nature, and draw thence a sound nutriment for the foliage of literature and art. No educational system can have a claim to permanence unless it recognizes the truth that education has two great ends, to which everything else must be subordinate. The one of these is to increase knowledge, the other to develop the love of right and the hatred of wrong.

*Professor Huxley.*

*Educational Talk.*—If talk could rule the world and hasten the millennium our planet would be abundantly ruled, and the good time coming would not be long on the way. Vast systems of iniquity are periodically attacked by organized bands of paid orators, who in set phrases and rotund delivery demolish the strongholds of evil, and right the wrongs of an abused world by the strong force of convincing logic.... It is *work not talk* that lifts up this world. It is a good thing to know how to talk well, but it is a much more useful thing to know how to act well. We need more intelligent, energetic actors, and less lazy orators and essayists. We have many more eloquent preachers than good pastors, and a thousand-fold more self-pleased teachers than aggressive organizers. If our systems of instruction were to be improved, recognized, uplifted, we must stop resolving and go to working. Legislatures are composed of men who care very little about education in the concrete. Let a Horace Mann or a Horace Greeley go after them, and they will stop and listen and do something; but they care just as little about a string of resolutions, engrossed or engraved, as about the rights of the Heathen Chinese.—*Barnes' Ed. Monthly.*

*Compensation and Capacity.*—It ought to be an established fact that the compensation of teachers must not depend on length of service, but on the capacity of the teacher. There are teachers who have been for years at the work who are creatures of routine, of technicality, utterly without the inspiring quality. Then there are teachers still in the first year of their labor who were born for that labor, and who are nearly as suggestive as adaptable, and as judicious as they will be years hence.—*Ed. Journal of Va.*

*The Teaching of History in Schools.*—One of the strongest proofs of the need of a reform in the teaching of history in schools may be seen in the little interest felt by those who have left school, in this great subject. We see young women entering life with a keen desire to understand the existing state of things, and the events of our own time, but with scarcely a sense of what light is thrown by the past on the present, or of how we must find in the past the great movements which issue in the "long results of time." The question is then suggested,—How is it that we find ideas so unintelligent, and often even childish, in regard to a subject of such deep importance and noble proportions as our past national life? Some thought and observations on plans of teaching history give rise to the following hints as probable causes of the want of interest and esteem felt for this subject in after-

life: (1) Children are taught history too soon. (2) The want of good books for beginners. (3) Inferior teachers. (4) The cramming for examinations. (5) The employment of the lecture system in teaching history too exclusively and for too long a time.—*Jour. of Women's Ed. Union.*

—A new nautical instrument, called a *navisphere*, has been brought before the French Academy by M. De Magnac. It is meant to indicate, without calculation and promptly, the names of the stars above the horizon at a given moment (with altitude and azimuth), the angle of route for going from one point to another by the arc of a great circle, and the distance between these points (approximately). Spherical triangles may also be solved with it. The instrument consists of two parts, the one a celestial sphere with stars marked on it, resting on a spherical zone, to which all possible positions may be given; the other comprises the system of the horizon, the meridian, and the vertical, represented by a circle, a semicircle, and a quarter of a circle in metal. With this system of arcs one can trace arcs of a great circle on the sphere, and measure their lengths, also measure the angles formed by two great circles. The second part of the apparatus is called a *metrosphere*. The experiments with the *navisphere*, made on board the Atlantic steamship *Washington*, appear to have been highly encouraging.

—A recently published French work, "Les Peuples Etranges," give some curious information about medicine among the Chinese. A regular gradation, it appears, is established among medicines; there are 120 remedies of the first order, holding the rank of sovereign in the medical empire; 120 of the second order, with rank of ministers or higher mandarins, and 125 of the third and last order, like subaltern officers. In China, as in all Eastern countries, the physicians are made an object of raillery in stories. Here is a specimen:—Round the doctor's abode wander continually the shades of those whom they have sent to the other world; they glide along the walls, or crouch round the door, hoping to get back the body which the medical art has taken from them. One day a merchant's son went out to seek a doctor for his brother. He found such a multitude of dolorous ghosts round the doors of the fashionable doctors that he shrank from entering, as he did not wish to see his brother swell the number of victims. He went through the whole town, and at length perceived the sign of a druggist's shop in a small obscure street. There were only two ghosts before the modest abode. The youth knocked resolutely; the *savant* opened. "How long have you practised medicine?" asked the young man. "Only since yesterday," was the reply!

*Signalling by Sunlight.*—The system of signalling by which Colonel Pearson, in Ekowe, has succeeded in communicating with the Commander-in-Chief in Zululand is, though well known by name, little understood. It consists in flashing an image of the sun to a distant receiving mirror, and spelling out words by the equivalents of the Morse dot and dash telegraph signals. Thus, the reflected image of the sun, if instantaneously extinguished, represents the dot, and an image allowed to exist for a second, say, represents the dash. If a brief flash represents the letter E, and a longer reflection the letter T, a short and long flash the letter A, and so on throughout the alphabet, it is easy while the sun shines to transmit a message to a distant station without any fear of the enemy being able to cut the communications. The system, which was developed by Mr. Morse, has been used for some years for telegraphing across the Straits of Gibraltar, but has been employed for the first time for war purposes in Afghanistan and Zululand. The instrument used is known as a heliostat, which, moved by clock work, keeps the sun as it were standing still in its mirror. A simple shutter is all the mechanism required for making the exposures long or short. The signalling is necessarily slow and tedious work, and the receiving mirror must be very closely watched to catch the true meaning of the flashes. It has been suggested that it is possible to make the flashes print themselves on a sensitive strip, thus obtaining a permanent record, free from accidental errors, but it is questionable whether the apparatus would not then become too complicated. The French have recently been experimenting with the view of utilising the electric light for night work with the heliostat, and they have, it is said, succeeded in reducing the requisite apparatus to portable dimensions.

*Care of Children's Eyes.*—It is no uncommon thing now to see or hear of mere children using eye-glasses, because of some defect of sight. Myopia (for near-sightedness) is the most common defect, and it is said to be manifestly increasing among school children, in other countries as well as in our own. The eyes of studious children are especially liable to suffer. Reading tires weak eyes, and eyes grow weak or diseased from too steady application to books. There are many disadvantages connected with learning the alphabet in very early childhood, and danger to the sight may be reckoned among them. The eyes of children like all their other organs and faculties, are adapted to the study of natural objects, or the phenomena of the world into which they have come. This study is play to them, and tends to healthy development of both mind and body. Their introduction to the fine long lines of little black letters in print should not come too early, or too rapidly—not until a love for nature and a faculty for observation have been so cultivated that reading will not be immoderately attractive. Then they must learn to read and study in a proper light, one that shines upon the book or paper, and not directly upon the eyes. A hanging lamp is much to be desired, and those who read in the evening can sit so that the light comes down upon the page from behind them. In gathering about the evening lamp upon the table, those who read should sit so that the light shines upon the book or paper from over the shoulder—the left shoulder if practicable. The eyes suffer severe strain from reading when lying down. One who is too tired to sit up, is too tired to read. When the body is too enfeebled by disease, the eyes are weak sympathetically, and should not be allowed close application. Reading in railway cars, or in any place where it is impossible to keep a steady focus for the sight, causes strain and injury to eyes. Children should be taught to avoid all these injurious practices. Most of the youthful cases of near-sightedness are those who begin to learn piano-playing when quite young, and it seems that the fixing of the sight upon the notes, while the energies are at the same time bent upon the schooling of the fingers, has a peculiar tendency to develop near-sightedness. Ought not a child's music lesson to be made very short, and the hours of practice few and of brief duration? We think so not only for the sake of the eyes, but also for the sake of the spinal column and the nervous system.

*Night Lamps.*—A writer calls the attention of all consumers of kerosene oil to the pernicious and unhealthy practice of using lamps filled with that article with the wicks turned down. The gas which should be consumed by the flame is by this means left heavily in the air, while the cost of the oil thus saved at present prices would scarcely be one dollar a year for the lamps of a household. His attention was called particularly to this custom while boarding in the country where kerosene was the only available light. A large family of children living in the same house were taken ill one night, and on going to the nursery the mother found the room nearly suffocating, with a lamp turned down; whereupon the physician forbade the use of a lamp at night, unless turned at full head. He says he could quote many cases, one of a young girl subject to fits of faintness, which, if not induced, were greatly increased by sleeping in a room with the lamp almost turned out. Besides the damage to health, it spoils the curtains, soils the mirrors, and windows, and gives the whole house an untidy air and an unwholesome odour.

*Too much Sleep.*—The effects of too much sleep are not less signal than those arising from its privation. The whole nervous system becomes blunted, so that the muscular energy is enfeebled and the sensations and moral and intellectual manifestations are obtunded. All the bad effects of inaction become developed. The functions are exerted with less energy, the digestion is torpid, the excretions are diminished, while, in some instances, the secretion of fat accumulates to an inordinate extent. The memory is impaired, the powers of imagination are dormant and the mind falls into a kind of hebetude, chiefly because the functions of the intellect are not sufficiently exerted when sleep is too prolonged or too often repeated. To sleep much is not necessarily to be a good sleeper. Generally they are the poorest sleepers who remain longest in bed—i. e., they awaken less refreshed than if the time of arising were earlier by an hour or two. While it is true that children and young people require more sleep than their elders, yet it should be the care of parents that overindulgence be not permitted.

Where the habit is for children to lie in bed until eight or nine in the morning the last two hours, at least, do not bring sound dreamless sleep where the hour for retiring is eight or nine p. m., but are spent in dozing, and, in fact such excess cannot fail to insure the harmful results described by the authority quoted. What is called laziness among children is in very many cases disease, and is largely due to this as well as the other causes mentioned that undermine the foundations of health.

*Botanical Notes.*—Our spring wild flowers were later than usual in making their appearance this year. Now, however, the woods and fields are studded with them in every part. Some days ago only a few were to be found; now there are almost too many even to name, much less to describe. We shall name and describe a few of the most beautiful, and shall be glad to awaken an interest in the most delightful study of botany.

Botany, taking its votaries into the pleasantest part of the country, into the woods and field, is at once the most pleasurable and the most healthful of studies. We need not beg any one to follow us to the haunts of the flowers nor offer any apology for leading them there.

The first flower of spring is the Canadian snowdrop. *Sanguinaria Canadensis*. A low growing plant with a single leaf and flower to each plant. The leaf is large and rounded, generally folded, and the flower is pure white, with two sepals and from 8 to 12 petals. The flower soon falls and hardly be found as late as this. Every part of the plant, when broken, exudes an orange red juice, which has given it the name of "Blood root."

*Hepatica Triloba.*—This is another very early flower in rocky woods and hill sides. The flowers appear before the leaves, and are of several tints, of pink and lilac, though frequently pure white. Sometime it is found almost double, having two or three rows of petals.

*Trillium.*—Three species are found in our woods. The commonest as well as the most beautiful is the large white one, *T. Grandiflorum*, it is of snowy whiteness, and is sometimes found of three or four inches in diameter, and sometimes so small as to lead to the belief that it is another species. All the parts of this plant are in threes—three leaves, three sepals, three petals, etc. The name is derived from its tripartite character.

*Trillium Erectum.*—This is not so abundant as the white one. It is of a deep dull red, and is found in the same localities.

*Trillium Erythrocarpum*—Painted Trillium.—This very pretty flower is much smaller than either of the preceding. The petals are milk white with crimson veins and deep crimson blotch at the centre of the flower. This species is rarer than the other two, and grows further north.

*Thyris Americanum.*—Dog-tooth violet. This pretty little flower is like a very small yellow lily in the flower. The foliage is like that of the Garden tulip and is marked with large brown blotches.

In early summer large patches of ground are seen covered with this well marked plant with but few flowers, only the larger roots bearing flowers.

*Uvularia grandiflora.* Bellwort. This like the dog-tooth violet and Trilliums is of the lily order. It grows about a foot high with something of the aspect of a Solomon's seal. The flowers are of a dull yellow and hang pendulous from the end of the plant; they are born singly, and the petals are twisted. The leaves surround or clasp the stem.

*Claytonia virginica,* Spring beauty. This sweet little flower about old stumps in cool moist places. It springs, from a small tuber deep set in the ground, and bears a pair of narrow lance-shaped small leaves, and a cluster of small pink flowers with crimson veins.

*Dicentra Cucularia.*—*Dutchman's Breeches.* A delicate little plant with finely divided leaves and bearing, spike of oddly shaped flowers something like the bleeding heart of the gardens but much smaller and creamy white in color. The root is a small scaly tuber and the plant is found growing in rocky broken ground, in partial shade.

*Dicentra Canadensis.*—*Squirrel corn.* This much resembles the preceding. The foliage is not so finely divided and the flower is faintly tinted with rose. The root is like a small yellow pea. It generally grows in cool shaded places.

*Caltha Palustris.*—*Marsh marigold.* The swamps are no gay with this large bright yellow flower. It is like an enormous buttercup. The leaves are large rounded or kidney shaped.

*Aquilegia Canadensis.* Columbine. Rocky hill sides where this plant grows, will now be resplendent with its bright scarlet flower. It is curious in form, each of the five petals is produced backwards into a hollow spur about an inch long resembling the larkspur of the gardens.

*Violets.*—There are now five or six species in flower. The first to appear is *viola blanda*. It is very small, pure white with very faint stripes of violet at the base of the petals, and a faint odour.

*Viola Palustris.*—*Marsh violet.* Flower rather larger than the preceding, pale lilac.

*Viola Sotundifolia.* Yellow flowered. These three species are stemless, and have small rounded heart shaped foliage and small flowers.

*The Union Jack.*—Our national flag at the present day is the Union Jack—a combination of the flags of St. George, St. Andrew, and St. Patrick, the patron saints of England Scotland, and Ireland. It is only since the union of Ireland, which took place in 1801, that this banner has been in use. Indeed, the first Union Jack we possessed dated no further back than 1606, after the union of the crowns of England and Scotland by James I. This flag consisted of a combination of the crosses of St. George and St. Andrew, and was in 1707 constituted by royal proclamation the national flag after the union of the parliaments of the two countries. To unite the three crosses into a harmonious whole has been now satisfactorily accomplished. The cross of St. George is red on a white ground, that of St. Andrew a white cross in this form X (called a saltire) on an azure ground, that of St. Patrick a red saltire on a white ground, and you will find each of these crosses distinctly visible on our present national banner. On our bronze money you will also find upon the shield of Britannia a tolerably accurate representation of the Union Jack. With regard to the name by which our national flag is known, while 'union' seems appropriate enough, the reason why it is called a Jack is not at first apparent. It is said, however, by some to derive its name from James I. (*Jacques*), who united the kingdoms of England and Scotland; but this is not probable. The most likely derivation is from the word *jacque*, applied to the jack or overcoat formerly worn by the British soldier, which bore the representation of a cross.—*Little Folks.*

## THE JOURNAL OF EDUCATION.

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**ABSTRACT FOR THE MONTH OF APRIL, 1879.**

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.		
1	29.06	35.1	22.6	12.5	29.2210	29.350	29.115	.235	.1200	76.0	N. W.	24.0	9.6	10	7	0.55	1
2	22.34	29.1	15.2	13.9	29.4152	29.433	29.366	.127	.0826	70.0	W.	22.6	9.1	10	7	0.05	2
3	18.27	26.5	13.7	12.8	29.4555	29.490	29.423	.067	.0686	67.4	W.	17.6	9.9	10	9	0.06	3
4	18.66	25.0	8.5	16.5	29.5971	29.789	29.472	.377	.0700	70.0	W.	15.6	7.5	10	3	0.01	4
5	24.96	30.7	18.8	11.9	29.9216	30.004	29.802	.202	.0974	72.2	W.	14.7	9.1	10	2		5
Sunday 6	.....	38.8	24.4	14.4	.....	.....	.....	.....	.....	.....	W.	19.0	.....	.....	.....	.....	6 Sunday
7	34.60	40.0	27.4	12.6	29.7665	29.946	29.647	.299	.1246	68.4	W.	15.8	8.2	10	0		7
8	32.66	39.6	23.7	15.9	30.0221	30.084	29.971	.113	.1155	61.5	W.	17.4	2.0	10	0		8
9	36.99	49.4	30.2	19.2	29.9219	29.998	29.890	.103	.1396	63.4	W.	17.2	5.9	10	1		9
10	29.52	33.0	24.5	8.5	29.8916	30.011	29.717	.284	.1146	69.9	N. E.	14.5	9.2	10	5		10
11	31.60	33.6	28.6	5.0	29.7612	29.858	29.689	.169	.1322	74.1	N. E.	16.7	10.0	40	10	0.02	11
12	35.69	44.5	29.1	15.4	29.8880	29.868	29.800	.068	.1060	51.6	N. W.	14.5	6.0	10	6		12
Sunday 13	.....	42.0	26.0	16.0	.....	.....	.....	.....	.....	.....	S. W.	16.8	.....	.....	.....	.....	13 Sunday
14	34.07	42.0	26.1	15.9	29.7106	29.767	29.670	.097	.1210	63.2	W.	11.7	3.9	10	0		14
15	37.64	46.5	27.5	19.0	29.7464	29.802	29.704	.097	.1212	57.5	S. W.	5.7	7.4	10	0		15
16	40.17	46.6	35.1	11.5	29.8322	29.956	29.699	.257	.1474	59.1	N. W.	9.7	7.4	10	1		16
17	40.26	49.3	30.8	18.5	29.9891	30.035	29.950	.085	.1445	58.7	N. E.	7.6	4.5	9	1		17
18	47.60	41.8	32.9	8.9	29.7942	29.900	30.672	.237	.1349	60.2	N. E.	16.5	9.0	10	2		18
19	42.00	52.3	33.9	18.4	29.7038	29.748	30.666	.085	.1265	48.5	N.	17.6	4.7	10	0		19
Sunday 20	.....	55.9	35.5	20.4	.....	.....	.....	.....	.....	.....	W.	16.0	.....	.....	.....	.....	20 Sunday
21	48.29	60.1	40.1	20.0	30.1219	30.232	30.010	.222	.1293	37.7	W.	12.2	1.7	9	0		21
22	51.55	60.3	42.1	18.2	30.2360	30.333	30.071	.262	.1476	38.9	W.	9.6	7.0	10	0		22
23	49.87	58.0	39.5	18.5	30.1731	30.373	29.968	.405	.1700	41.5	N. W.	19.5	4.2	10	0		23
24	44.31	53.3	34.1	19.2	30.3340	30.457	30.178	.279	.1220	42.7	E.	8.7	4.5	10	0	Inapp.	24
25	47.71	53.8	42.1	11.7	29.9455	30.138	29.832	.303	.1859	56.7	S. E.	14.5	10.0	10	10	0.27	25
26	48.19	59.0	39.1	19.9	30.0137	30.070	29.867	.203	.2700	80.6	N. W.	4.7	5.5	10	0		26
Sunday 27	.....	60.9	43.8	17.1	.....	.....	.....	.....	.....	.....	S.	11.7	.....	.....	.....	.....	27 Sunday
28	56.52	65.8	49.6	16.2	29.8715	29.915	29.823	.089	.3581	78.0	S.	16.0	9.6	10	7	Inapp.	28
29	51.46	62.0	40.3	21.7	29.9992	30.053	29.957	.096	.2180	57.4	S. W.	9.5	1.2	4	0		29
30	51.41	65.5	42.1	23.4	29.7619	29.914	29.685	.229	.2704	71.6	N.	11.7	5.9	10	0	Inapp.	30
Means.....	38.289	46.68	30.91	15.77				.1902	.14797	61.65		14.61	6.65				

\* 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, 38.29 Mean of max. and min. temperatures, 38.79. Greatest heat was 65.8 on the 28th; greatest cold was 8.5 below zero on the 4th,—giving a range of temperature for the month of 57.3 degrees. Greatest range of the thermometer in one day was 23.4 on the 30th; least range was 5.0 degrees on the 11th. Mean range for the month was 15.77 degrees. Mean height of the barometer was 29.84779 Highest reading was 30.457 on the 24th; lowest reading was 29.115 on the 1st; giving a range of 1.342 in. Mean elastic force of vapor in the atmosphere was equal to .14796 in. of mercury. Mean relative humidity was 61.65. Maximum relative humidity was 95 on the 25th. Minimum relative humidity was 28 on the 22nd. Mean velocity of the wind 14.31 miles per hour; greatest mileage in one hour was 34 on the 1st; when the greatest velocity in gusts was equal to 44 miles per hour. Mean direction of the wind was W. N. W. Mean of sky clouded, 66 per cent. Rain fell on 5 days. Snow fell on 5 days, Rain or snow fell on 10 days. Total rainfall 0.27 in. Total snowfall 6.9 in. Total precipitation in inches of water 0.96.