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SCIENCE OF LANGUAGE AND POPULAR EDUCATION.*

BY D. J. F. M'CURDY, UNIVERSITY COLLEGE, TORONTO.

THERE are many reasons why popular education in all its stages should concern itself with the science of language.

1. To be consistent and complete all language teaching should include something of the philosophy and science of speech. No department of study is regarded as complete in which the substratum of general conditions and broad fundamental facts is not in some degree presented and elucidated. In mathematics the basis of general principles is almost taken as the starting-point, and *geometry* (earth-measuring) has come to be a pure science. So in geography and history, text-books do not confine themselves to a mere list of names, or a mere skeleton of events. In a similar way pupils in the natural and physical sciences are informed of the widest generalizations, the most comprehensive laws of chemical and magnetic action, the conditions of

growth and decay, the observed order of the terrestrial and celestial phenomena. So may it justly be expected to be with the teaching of language. For the more practical uses of human speech, education has done a great deal, and is always improving its methods, and more wisely selecting its subjects. The use of language as an instrument of communication is not overlooked, and it is becoming more and more an object of enquiry how pupils may be best taught to gain a command of foreign languages for the uses of living speech. Again, language as a record of thought has had a leading place in all schools, mediæval and modern, and there is probably no study which has been more successfully cultivated than this general philological discipline, or the means of getting at the thoughts of men through a proper analysis and interpretation of the language in which they are embodied. It would therefore seem just and necessary that something should be done for

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language itself, viewed not as a means of imparting or of acquiring knowledge, but as an object of study for its own sake, or in other words, that philology should be supplemented, illumined and rationalized by means of comparative philology, that having the thoughts of men in the words that convey them, we should learn and teach how words are the ever-growing index and mirror of thought; how sentences and words are built up as the organs of human expressiveness; how the elements of each language change with the needs of the community, and under the influences of causes whose operation may be observed by each student for himself, and the measure of whose effects may be estimated and verified in the most familiar phenomena of our daily intellectual life.

2. Again, the science of language is worthy of a place in general education, because of its wide reach and manifold associations. Since language is the necessary accompaniment and the faithful reflex of thought, the expressiveness of language is an obvious subject of observation and study in all the vast range of spoken or written utterance. The manifold exemplification of the naming faculty in the designations given by different races and communities to the various objects of earth and sea and sky, and in the terms for mental, moral and spiritual phenomena, with all their mysterious and eloquent self-revelation, makes our science an organ of investigation and imagination that ranges from heaven to earth and earth to heaven, and which sets forth for our admiration and intelligent study all the accumulated treasures of human observation and reflection which language has noted, catalogued and preserved. And a wholesome practical end of education is also subserved by the cultivation of the science of language.

By virtue of its absolute universality, it belongs to the circle of the historical sciences, and yet rests upon a foundation in the physical nature, and so, as far as the forms of speech are concerned, its methods are those of the natural sciences. Thus on the one side it has all the fixity and permanence of the laws of the material world, and on the other affords the charm and benefit of a study in the realm of free-will and intelligent action in which the history of the race has been evolved. Thus it mediates and holds the balance between the claims of the physical and the mental sciences to the advantage of both, and with unrivalled influences tending to symmetry of intellectual development, breadth of view, impartiality of judgment and love of truth.

3. A further benefit conferred by the popular study of linguistic science is a profounder practical sense of the truth of the oneness of mankind, with a stronger and growing stimulus to cosmopolitanism, toleration and charity. It cannot be said that linguistic research has reduced the manifold dialects of the world to a single or even to a few families of speech, but it has brought to us a knowledge of these various idioms, and with each added item of such knowledge comes a new impulse to community of feeling with all our brethren of mankind. When we study foreign idioms we cannot but be conscious of sharing the mental processes of the native speakers, and so to a certain extent we put ourselves in their places, look at the world from their points of view, sympathize with them in their limitations, or it may be in some matters imbibe their larger or truer conceptions. Comparative philology is thus the most Christian, because the most truly human of sciences. As long as we continue to look with exclusive favour on a few classic idioms and literatures, we are still in the pre-

christian stage of the refined Greeks and Romans who kept themselves aloof from the Pentecost of tongues, and missed its blessings. If we persist in educating our youth in the polished classic tongues alone, we restrain them from entering into that community of feeling and sentiment for which the steamship, the telegraph, the postal union, geographical exploration and missionary effort, are forming and developing as the richest moral possession of the present and the coming age. The people of India have been doubly won for England through the sense of kinship, awakened by the evidence from comparative philology that an Indo-European language means an Indo-European race. And though we cannot bring within such close limits of affinity other outlying races, we can yet study, read, understand and feel the thoughts of multitudes of foreign tribes and nations, and so realize better that they are our own flesh and blood.

4. The study of language is to be recommended because of the additions that the science has made to our positive knowledge. In the first place it has taught us really to understand the body of human speech objectively, or language in the concrete. Investigation into any foreign language or dialect, and even into our own, is now a new thing, a new method. Any new mode of expression is now seen to be just a special way in which the speaker or his community looks upon the world, one variety emphasizing subjective conceptions, the other objective impressions, one putting the world of action in the fore-front, the other mental and emotional moods; the one emphasizing the abstract, the other the concrete, and so on in endless variations. And this whole district of knowledge has been opened up simply because the science of

language has given us the hint to observe and compare. This could never have come from philology, as apart from comparative philology. Then the various idioms of the earth have been classified, and each group, family or dialect falls naturally into its own place. A basis is thus given for observation and further classification, and the study becomes full of life and interest, because it may be made intelligent and systematic. For the processes of linguistic change are seen to be subject to ascertainable and verifiable laws; and to this rule no dialect of mankind is or can be an exception. Moreover, these laws are valid and available for all purposes of working and teaching, and thus nothing is lacking to our science of adaptiveness, symmetry and dignity.

Nor is our knowledge of language on its subjective side, in its relations to the human spirit, of less intrinsic and ultimate value, even if it be as yet less positive and well-established. Language looked at as the act of speaking, and not as something spoken, brings us more closely into contact with the workings of men's minds than any other instrument of observation. And the philosophy of speech has followed closely in the footsteps of the science of language, bringing with it at least a new chapter in the philosophy of man. Language is thus a mighty tree of knowledge, spreading its branches abroad over all lands, and reaching upwards to the stars, which the Hebrew poet says. God himself calls by their names, and it strikes its roots deep down into the microcosm, the nature and spirit of man, who alone thinks and speaks, to whom the macrocosm was given that he might know it, interpret it and enjoy it. Relatively, indeed the value of the science for the knowledge of the world within us is far greater than it is for the knowledge of the greater world without us. It comes as a new

organon to logic, and is destined to revolutionize its study. The laws and processes of thought will gain more from the patient observation of both normal and abnormal phenomena of speech than from any other source or means. Metaphysics proper and ontology have been dethroned from their long usurped dominion over mind and conscience, and shown to be largely word-play and idolatry of verbal figments. Through this science of language scholasticism has received its long-deserved but long-averted death-blow. Again, the historical study of language from the subjective side has opened up what is really a science of itself, the science of meanings, or sematology. Here, as we cannot follow the methods of the physical sciences exclusively, the results are not so certain on a wide scale as those of the morphology of speech, but general principles of incalculable importance have been firmly established. More and more it is illustrated and evidenced that reason and speech are inseparable in growth and development, that speech is not merely the servant and organ of reason, but its necessary complement, its expression, and its physical stay and support.

So too the history of thought has been laid bare in its great outlines. Etymology, safely and surely applied to the analysis and explanation of our refined, comprehensive, elusive metaphysical terms, shows them to have been in every instance derived from simple primitive ideas formed by the earliest men by generalizing observation of the every day processes of nature, the actions of men and animals, generalizations from most elementary data, resting wholly upon a physical basis. And the lesson is being applied to the undermining of a vain "intuitional" philosophy, mis-called the philosophy of common sense, and false from the very founda-

tion because it ignores the fact that "sense" is historically a generalization and abstraction from successive observations through the senses.

But scientific etymology has made gains for us of a still more practical kind. It has added immensely to our knowledge of the history of mankind. It is in fact the only sure instrument for opening up the undiscovered tracts of time, known vaguely by the name of prehistoric ages. Wherever families of speech are well established on the basis of structural principles, we can get back to the primitive vocabulary of the speakers and so learn their circle of ideas, the degree and extent of their civilization, their habits, customs and laws; and, by combination with geography and prehistoric archæology, their actual movements, social changes, and even a skeleton of their history may be constructed. This has been most successfully done with the two leading races of the world, the Semitic and the Indo-European, whose languages have been most closely studied, and have yielded results more wonderful and instructive than any historical investigation ever attempted in any age or any region of the earth.

Having thus set forth some of the reasons why the science of language is entitled to a place in popular education, it will be proper to try to show in a general way, or at least to suggest, how such teaching can properly be accomplished. All that can be attempted here is to throw out a few hints as to what might properly and advantageously be taught in the several grades of our educational institutions.

Should the science of language be taught in our common schools? Most certainly. At least something that it has to tell the world of general utility and fundamental importance in mental training should be taught to those who have no other intel-

lectual preparation for the mature life of manhood and womanhood than that furnished by the public school. This does not necessarily imply that formal text-books should be used for the purpose. The common schools provide some instruction in chemistry, geology and botany, much more than would as yet be proper for the science of language, and special text-books are not considered necessary for the imparting of elementary or useful facts in these sciences. There would seem to be no good reason why even elementary grammars should not contain some essential principles of our science. Indeed, it ought perhaps to be a primary postulate that the grammar of no language can be satisfactorily taught without some reference to the principles of general grammar. Even elementary grammars of Greek and Latin now recognize this necessity, and there is no reason why the teaching of other languages should not follow suit. It may be added that the English language affords special advantages for the suggestion of important doctrines of comparative philology.

In the first place something should be taught in our schools about the process of speaking. There is no justification for keeping our children in absolute ignorance of the nature and office of that which is the distinguishing characteristic of the race; which has made the race what it is; without which in fact the race would not have been at all; which is their most common employment; and the use of which determines their place and influence in the world. The organs of speech could in a general way be exhibited, as well as the muscles of the arm, the bones of the leg or the organs of digestion; while as illustrations of adaptation or design they are as instructive as the organs of hearing or sight. Then, as to the

classification of articulate sounds represented by the letters of the alphabet, there is no reason why the labials, dentals, linguals and palatals, or so-called gutturals should remain unintelligible phrases till, and perhaps after, a favoured few among the pupils come to a sense of their importance at the threshold of Latin and Greek grammar.

Again, as to the history and preservation of language, school children should be taught that writing is a means of giving accuracy and permanence to what is uttered as well as a means of communication when the voice cannot be heard. But it must be impressed upon them that writing is only secondary, that language is essentially a spoken thing, that the alphabet is not primary and fundamental, but a most imperfect clumsy working instrument for recording the elements of our words; that the word itself is not the original thing but the sentence. They should be initiated into some of the capital mysteries and illusions of our historical and present system of writing: silent and inconsistent letters should receive at least some general explanation. Further, in the analysis of current English words and their proximate derivations as given in grammar or spelling-books, an excellent opportunity is given of setting forth some leading principles in the growth of language, not merely in the composition of words, but in the development of ideas.

In like manner reading-books might contain some allusions to the world-wide and most important results of our science; and there would be no difficulty about the problem of making of popular interest that which may be shown even to young minds to be of universal importance.

With regard to the High Schools (including of course Collegiate Institutes) it is obvious that in the teach-

ing of Latin, Greek, French or German, a much broader basis is afforded for the illustration of the great truths of linguistic science. In the first place, in the department of the morphology of speech, similarities as well as differences of structure and of syntactical¹ expression in all or any two of the languages named, may be brought to the attention of pupils, and be easily fastened in the memory. How, in the main, English differs from German, French from Latin, Latin from Greek, is not difficult to illustrate, and a knowledge of the fundamental resemblances between all the five forms of speech cannot fail to prepare the learner for the intelligent apprehension of the great fact of Indo-European linguistic unity with its momentous results. As to phonological relations, a slight knowledge of the German, with the Latin or Greek vocabulary, will give the necessary basis of fact for the appreciation and application of "Grimm's Law," and a considerable number of other important principles may be pointed out as inferred from a comparison of Greek or French or English with Latin, and English besides with French or German. In the High Schools also a conspectus should be given of the families of language throughout the world, and the great underlying principles which indicate the divergences. Finally, a beginning should be made in the study of comparative inflection: the more obvious identifications of case and personal endings in the several languages should be noted, and the more glaring solecisms in grammatical terms coined in unscientific ages, and the merely practical and mechanical character of most of the rules of syntax might be indicated and illustrated by striking examples.

As a practical illustration of the value of some systematic effort at elementary training in general linguis-

tic principles I may cite the fact, that has repeatedly come under my own observation, that the young men who take up special philological studies in the German Universities are able early to do good solid work, mainly because sound linguistic principles have been instilled into them in the secondary and preparatory schools.

In the High Schools it is of the first importance that instruction in linguistic science should be confined to well established principles capable of ready verification and easy of remembrance, and general conclusions inferentially obvious and universally conceded. The conditions in the University are different, for there time is supposed to be given for an unfettered pursuit of the historical as well as of the physical sciences.

Therefore, within reasonable practicable limits, attention should be devoted to questions of the wider associations of language, its relations with the mind of the individual, the needs of the community, and the outer-world; of the far-reaching consequences of the study for the history of mythology, philosophy, religion and social and political phenomena; of the observed laws of the development of words and their meanings; of the relations of language to race; the true principles of classification of languages and legitimate criteria of relationship.

But all such questions, important and interesting as they are, must be treated with great caution, and a certain reserve of non-partisanship, in order that the true scientific spirit, which looks first to well-established facts and principles, may be duly awakened and fostered. Accordingly the larger share of time and attention should be devoted to the results that have been actually reached in the fields of investigation already explored and defined. The Indo-European

sphere must afford the chief material for preliminary training, partly because it is the only family of speech that has been thoroughly worked, and partly because it is the only type of language with which all of us are familiar. A few of the profoundly interesting matters that ought to be more or less discussed are the following: laws of sound change within the Aryan group, which can at this stage be studied with some independence of judgment; the process of retroversion of current words in familiar use to their primitive forms within their respective dialects, and finally to the Indo-European originals; the working back again from these ancient types for the explanation of difficult or the defining of exceptional historic forms, and the right theories to explain such diverging phenomena, whether resting on subordinate, undiscovered and yet not irregular influences, or on the operation of the principle of analogy; and other questions that form the staple of contemporary linguistic discussion.

Beyond the Indo-European sphere, the work, though much less minute, must be equally exact and methodical. First of all, in order to appreciate the fact that most of the world is not Aryan, and to get some faint idea of its possibilities in the way of linguistic expression, it would be well that students of comparative philology should form some practical acquaintance with one or two non-Aryan idioms. For this end, I would suggest three distinct types, a sufficient knowledge of which for comparative purposes could be acquired in a few weeks. The great anthropologist Tylor recommends that enough Hebrew should be learned to enable one to spell out the first chapter of Genesis. If this is done with the right aim in view the result would be most beneficial, Hebrew being the most familiar example of the idiom

of the Semites, who are nearest to the Aryans in mental and moral constitution and history, their languages, moreover, being also of an inflectional type. Next, a summary view could be taken of one of the agglutinative idioms, say Turkish or Finnish, so that some insight might be had into the beginnings of the inflective tendency in languages whose growth was arrested in the combinatory stage.

Then, it would be of great advantage if one or two of our own Indian dialects were to be studied with a similar intelligent practical object. The result, I am sure, would be beneficial for our science as well as for our human feeling. With these equipments, involving no great outlay of time or energy, the subject of the classification of human languages generally could be successfully taken up.

Finally, the subject of phonetics should receive the attention it deserves, as the fundamental physical discipline whose application casts ever increasing light upon what was once the most obscure of all linguistic phenomena, the dislocations and distortions, amounting often to complete revolutions, that have taken place in every family of speech. Thus a study of phonetics, both from the physiological and the linguistic side, sufficient for an introduction to phonology, is indispensable, since phonology forms the *principia* of the whole science; and while in the observed facts of uttered language are found the phenomena that suggest and confirm the laws of phonological change, and the principles of comparative grammar, the organs that frame and perpetuate the living word reveal the ultimate physical processes that have conditioned the whole history of speech, and forever necessitate the reign of law within its spacious realm.

THE AVERAGE HEALTH OF OUR GIRLS.

BY AN ONTARIO HIGH SCHOOL TEACHER.

"THIS is one thing I have not told," said the honest young gentleman whose composition "On Girls" Mark Twain recently gave to the world, "This is one thing I have not told, and that is they always now their lessons bettern boys." The young gentleman was right, and they do a good many other things besides. Music, so we are told by competent judges, is a study to which a great deal of time must be devoted, even by those who possess a decided aptitude for it, in order that any progress may be made. But a large number of girls are expected to study arithmetic, algebra, geometry, English history, Canadian history, grammar, literature, composition, geography, spelling, book-keeping, writing, reading, French, Latin, German, hygiene, scientific temperance, chemistry, physics,—these are all I can remember just now, but it seems to me I have forgotten some of them; and then when they have studied, or tried to study, such of these subjects as the powers that be, from the Minister of Education downwards, see fit to prescribe for them, they have music to study and practise besides. And if anybody thinks that it is nothing very hard to sit on a piano-stool for an hour or two at a time, with no support for the back save atmospheric pressure, and strive to grasp scales, and intervals, and octaves, and rests, and slurs, and waltzes, and exercises, and a number of other things, then let that person remember what the old lady said, "Experientia does it." Nor is this all that girls do. All of them, except a few of the baser sort, are able to help their mothers in various things in the house, and do so; and however good and desirable and

important a thing this is (would that there were more of it), yet all these things should be counted when one comes to consider the full force of the boy's remark: "They always now their lessons bettern boys." There is another thing that girls do, they "go out." Out they go—to the toboggan-slide, to the skating rink, to the prayer-meeting, to the church festivities, to nowhere in particular, to everywhere in general, and, finally, to the party. They go out to this last a great deal. Some of them make an average of forty per season. And they come home when they are ready. That was the reason why I had the honour of receiving the following excuse (sic) for absence:

"Please excuse Maria for not being at school this morning, as she was out until three o'clock at a party, and so could not come to school so early as nine o'clock!!!"

And how do they come to school at nine o'clock? A great many of them come with white faces and weary air. By the time they have journeyed upstairs, hung up their wraps and reached their seats in the school-room they sink down with evident relief, and some of them scarcely stir from their places until it is time for them to go home. Not more than half of them can really be called well; not more than half of them bring to their work that clear and happy mind, free from the drag of bodily pains, and aches, and weariness, and weakness which it is so necessary that they should possess. I have some few statistics to offer, collected with a good deal of care. First, as to the time of retiring to rest at night. Five per cent. go to bed after midnight;

forty-one per cent. after eleven o'clock; sixty-seven per cent. after ten o'clock; thirty-three per cent. at ten or before. As to whether they eat any breakfast before coming to school five per cent., according to their own account, do not; thirty-seven per cent. a little; and the rest, it may be supposed, eat a fairly good breakfast. Not more than two per cent. are free from headaches; twenty per cent. have headaches every day; fifty-six per cent. have headaches weekly or oftener. These statistics have been gathered in a class of girls between thirteen and seventeen years of age, daughters of farmers, merchants, workmen and professional men, some of them rich and some of them poor. They are not being "crammed" for any examination. They are not confined in small or ill-ventilated school-rooms. They are not special cases, but simply an average class of Canadian girls, and the purpose of this paper is to call attention to the fact that the average health of our girls is not satisfactory. Nor is the reason very far to seek. Nature has a special claim on these years from twelve to eighteen. She needs a great share of the strength and vitality of these years to perfect the physical frame. "There are some things you cannot say," remarked an eminent physician the other day, "but I want to tell you this, that the health of many women is absolutely ruined for life before they are eighteen years old." We are too insanely wise to heed the claims of nature. We ignore her and defy her, and then by and by when our girls grow up to be invalid women, scarcely able to bring up their invalid children, or to do one good day's work without spending four days in bed afterwards, then we feel that Providence has dealt hardly with us and sadly remark, "She never was strong, poor thing." No. But she might have been if it had not

been for your blind folly. When she was a young girl you wanted her to "GET ON." By calling on the teacher and urging him to "push her on," you thought you got your wish, and you did your best to wake up her own ambition and it soon woke. Then you thought you would get a music master for her, so that she would "GET ON" with that. And the master, with that regard for his own reputation which is characteristic of many of us, allotted to her such tasks as would have been amply sufficient without arithmetic, etc. (see above). And she "got on" with her music. Or perhaps you took a general view of the situation, and made up your mind that she must have a Teacher's Certificate on the 11th day of August, 1887, at 12 o'clock noon. No other time will do. And so our young friend, who probably is quite as anxious about the certificate as any one, does her best to stuff herself with the prescribed "knowledge." Nature has not been silent. She has called, and the answer has been that the blood has all gone to the brain, and the brain gets more than its share, and all the rest of this wonderful temple that we live in suffers. Nature's revenge is a terrible one; her sentence of condemnation is written in ourselves, and is carried out not only upon us but upon our children. There is no escape from it. But we cannot say that we had no warning. These frequent headaches, that pale face and weary air—could anything speak more plainly than these things? People seem to be half-willing that their boys should have some little time to do work in at school. But if it is a girl, she must GET ON *all at once*.

In conclusion, I would beg to urge that more attention should be paid to the health of girls—to good air and exercise—and that every one who has the welfare of the country at heart should set his face vigorously against

the fatal idea that if we can only ensure the "getting on," health is a secondary consideration, and may be risked. Also, the attention of the authorities is respectfully directed to the advisability of having some system of medical inspection of schools to aid Head Masters in dealing with cases of which the following are types :

(a) Girl ten years of age, nearly ready to be promoted to Fourth Book class ; wearing plaster jacket for curvature of the spine, developed in the last two or three years ; thin, pale, weak-looking.

(b) Girl sixteen years of age ; sent

home several times by teacher because she did not seem able to stay at school ; very anxious to attend ; died suddenly a few months after entering the class, of congestion of the brain.

Of these two cases there is no doubt ; they have come under the personal observation of the writer, and are not at all exaggerated. If there were a Physician to the Schools, a medical officer say in each city and town, his services would be of great advantage in cases like these and many more where scholars, for instance, are mentally able and physically quite unfit for promotion to a higher class.

THE VEDAS.

BY A. J. EATON, M.A., PH.D., M'GILL UNIVERSITY.

NO apology is needed in introducing such a subject to the general reader of to-day. The time has come when scholars cannot afford to ignore the study of the Sanskrit, a language so copious, so refined and philosophical as to make it approach the level of the classics of the West, and which, in the science of language and ethnology, has opened up such a range of new questions and settled many perplexing theories. "A knowledge of the commonplaces, at least, of this oriental literature, philosophy and religion, is deemed as necessary as was an acquaintance with the Greek a generation or so ago." The importance of the Sanskrit was recognized by some English scholars, as early as the year 1786, for in that year Sir William Jones, the first President of the Society established in Calcutta for Asiatic research, wrote :—"The Sanskrit language is of a most remarkable formation ; more complete than the Greek, richer than the Latin, and stands, as well in its roots as its grammatical forms, in a relation so inti-

mate as not to have arisen through accident, and so decided that every philologist must believe that these languages have been derived from a source one and the same."

It is to be regretted that a work so thoroughly begun by such men as Jones, Colebrooke, Carey and Wilkins (who composed a Sanskrit grammar as early as 1795), should completely pass out of the hands of English scholars, so that, since the time of Bopp, Sanskrit learning has been almost entirely monopolized by German linguists ; for even in England the best Sanskrit scholars are Germans. But in England and America, as well as in Germany, Sanskrit has become acknowledged as an integral part of a university system of education. One of the most interesting facts connected with the study of the Sanskrit and its literature was the proof which it brought with it, that England in the conquest of India had but prevailed over a people of the same race as that which inhabited the British Isles, both Keltic and Anglo-Saxon—a peo-

ple that centuries before had attained the zenith and glory of their power, and who even when Elizabeth was sitting upon England's throne still revelled in a splendour, unparalleled by the West. Would the greeting have been different, had there passed in review before these European and Indian brothers a panorama of that life their fathers had lived together, thousands of years before, under the same sky, speaking the same tongue, now as much disguised in Bengali and English as the very persons of the fair and dark-skinned strangers? The object of this paper is to present briefly some interesting facts relative to the early literature of this people, their customs, religion and systems of philosophy.

I. THE VEDIC LITERATURE.

The Vedas are not only the earliest extant writings of the Indians, but are probably the most ancient literary records of our race. The word *veda* itself denotes "knowledge," from the root *vid*, "see," apparent in *εἶδος* (epic, *ἔ-Ἔιδ-ov*); *vid-vo*, *e-vid-ent*, etc. This meaning was specialized by the Indians, and to them it signified, *κατ' ἑξοχήν*, "divine knowledge," "the holy writings." Sāyana, the great native expositor of the Veda, explains its object thus:—"The Veda is that book which teaches one the way to obtain what he wishes, and to avoid that which he wishes not." Another says:—"The Veda consists of decrees of the highest authority, which do not proceed from men." According to the Indian views of later times the Veda in its entirety is a revelation of Brahma's; the orthodox view was and is that the whole Veda is an emanation standing in connection with the world's creation, and that it is free from all defects of human authorship. It was committed, they say, to four scholars for transmission and propagation. No doubt now

exists in the minds of their less prejudiced cousins of the West, that in the Veda we have a lyrical collection, made up of the store of song, "which the Hindus brought with them from their ancient homes on the banks of the Indus, and which they had there used for invoking prosperity on themselves and their flocks, in their adoration of the dawn, in celebration of the god who wields the lightning and the power of darkness, and in rendering thanks to the heavenly beings for preservation in battle."

2. THE PEOPLE OF THE VEDIC PERIOD AND THEIR CULTURE.*

Before proceeding to speak of the hymns of the Rigveda, some information respecting the people and customs of that primitive time ought first be added. We are mainly indebted to the Sanskrit for the indisputable proof of the fact that the forefathers of the Indians and Iranians and the Greeks, of Slaves and Lithuanians and Germans, of Italians and Kelts, in the distant ages of the past, spoke but one language, had as one people a common habitation, wherever that may have been, whether on the central plateau of Asia, as earlier writers thought, or in northern Europe, as later investigators have attempted to prove. We do not know the words of this original language from any extant records, but by comparisons these may in many instances be inferred. Nor do we know the date of the dispersion of this primal people; and the degrees of relationship that exists between the differ-

* This subject is more fully treated in Kaegi's most interesting summary of Heinrich Zimmer's work, "Altindisches Leben," a brief review of which is given here. Students of theology, philology and history, as well as those entering upon the special study of Vedic literature, could not do better than read the admirable work of Adolf Keagi, entitled, "Der Rigveda, die älteste Literatur der Inder," Leipzig, 1881.

ent members of the group is still more a matter of conjecture. Probably even before they separated, the language was no longer a unit; but as the original folk must have been numerous, no doubt dialects originated; these differences were increased from their successive and continued migrations, by which the most important nations and languages of the civilized world have arisen.

According to the best authorities, we may assume that the Indo-European race inhabited the central plateau of Asia. When they broke up from their common centre, they divided into two branches—the north-western and south-eastern. “The former marched to the home of the setting sun, till they reached that small peninsula we call Europe. The latter, the south-eastern branch, set out to discover the home of the rising sun, till they reached their earthly paradise in the valley of the land of the five rivers.”

The Indians and Iranians (the ancestors of the Persians) formed the south-eastern branch, and for a considerable space of time after separation from their cousins, now dwelling farther westward, still lived together under the common name of Aryans. Later the Indians wandered again southward, and settled in that country, now named after them. Of their place of abode at the time of the composition of the Rigveda—about 2,000 B.C.—the river names mentioned in the hymns give us accurate information. From this source we learn that the mass of Vedic people dwelt at that time in the regions through which the Sindhu (now the Indus) runs; most populous, of course, were the banks of this powerful stream, which, after receiving all its tributaries, attains such a width that boats floating upon its mid-waters are invisible from either bank. In animated outbursts the singers loudly praise its greatness

and beneficence. The songs of the Veda reveal to us other conditions of their origin and growth. No longer did the people live a nomadic life; for the movable tent of the shepherd had already been exchanged for a safer and more convenient shelter, which the climate and landscape of the Punjab (quite the same as they are to-day) demanded. In the earliest of these songs they seem to be still divided into a number of small tribes, mutually hostile, with a patriarchal form of government, which has always prevailed in the early ages of the world, and is adapted to a state of society where the people dwell together in families or tribes, and are not yet formed into a state or nation. As the father of a family acted as priest in his own house, himself kindling the sacred fire, performing the domestic ceremonies, and offering praise and prayer to the gods, so the king represented the tribe, performing the common sacrifices for his people. In some cases his title was hereditary, in others he was chosen by the united hundreds, or separate families composing the tribe, in their general assembly. His power was never absolute, but everywhere and always limited by the will of the people. No taxes were levied. The people brought voluntary gifts to their king, who was respected and obeyed as “judge and protector” in times of peace, and as their leader in battle.

Grazing and agriculture were the chief industries. The prayer for large herds of cattle repeatedly occurs, especially for cows, which to more than one singer are the embodiment of every good thing which Indra has created for enjoyment. Through the magic of the gods is the pure white milk placed ready prepared in the red cow; out of milk man makes pap and butter, “the favourite repast of gods and men.” With plough and harrow, with hoe and mattock, was the bosom

of mother earth prepared, and where it was needed watered by means of canals. Twice in the year the fruits of the field ripened. Besides bread, the chief articles of food were meal and butter cakes, different kinds of plants and fruits, and milk, prepared in a great variety of ways. Meat, roasted or boiled, was only enjoyed, for the most part, on great feast days and family celebrations. Drinking was generally indulged in. Abundantly was the water praised; it was the great panacea for human ills; by it health was brought to the body, and the days of man increased. To quench the thirst by means of it, as little occurred to the Vedic people as to the old Germans. They bathed in it; the cows drank of it; man had other drink, the Sura, a sort of brandy, prepared from corn or barley, and the

soul-rejoicing and care-dispelling Soma, which on account of its inspiring powers was celebrated as a god.

The wife in her house was inferior and subject to her husband; at the same time, however, had control over servants and slaves, over brothers-in-law and parents-in-law. The Vedic singer knows no tenderer relationship than that between husband and wife, and unfolds the high position of the latter, in that she, in common with the husband, presents the offering, and in the morning they together utter their prayer to the Eternal in the heavens. These relations are only conceivable where monogamy is the rule. In science and the arts the people of the Vedic times had as yet made but little progress. In one art only did they excel, viz.: the poetic.

THE FRENCH IN EASTERN ONTARIO.

BY D. F. H. WILKINS, B.A., BAC. APP. SCI.

WHERE the far-famed, historic Ottawa rolls its current seaward, not many miles from the hallowed ground where sixteen Frenchmen, four Algonquins and one Huron, under the indomitable D'Aulac des Armeaux, more than two centuries ago saved Canada; on the right bank, just as we leave Ontario for Quebec, lie the united counties of Russell and Prescott. Little known as are these counties, the former with its quarter million acres, and one-half available, the latter with over thirty-two thousand and more acreage, two-thirds available; little known with their population of thirty-eight thousand and twenty-two, of which nearly thirty thousand look to France and not to England as their mother land; little known, save for their famous Caledonia and Plantagenet springs, where

sulphur, saline and burning waters rise almost side by side from the Cambro-Silurian rock; little known, save for the unexplained botanical phenomenon of white-wood, *Triodendron tulipifera*, and of dogwood, *Cornus florida*, trees in West Hawkesbury township, the only present known localities of these trees being the north shore of Lake Erie, and, rarely, the south shore of Lake Ontario, from Niagara westward; little known until within the last few months, during that period they have acquired a celebrity of their own.

On the 16th day of March, of the present year, M. Evanturel, M.P.P. for those united counties, rose in his place in the Legislature, and, seconded by M. Robillaud, moved: "That there be laid before the House copies of all correspondence,

papers and reports, between the Department of Education and William S. Summerby and O. Dufort, Inspectors of Public Schools in the united counties of Prescott and Russell, during the last year, on the subject of Public Schools in the French settlements of these counties. Also, copies of all reports respecting the alleged difficulties between the English and French ratepayers of the town of L'Orignal, or upon the propriety of establishing a Separate School for Protestant children in that town."

The cause of this motion was the publication of a series of letters in the *Toronto Mail* during the closing months of last year, whose purport was to prove that in the above named counties, speciously, slowly, and yet certainly, our liberties were being undermined, that the French language was gradually being made official, and that our much-praised Public School System is in every way being made subservient to that of Quebec. Starting from these as premises, it was argued that slowly and surely would they spread until some fine day we should awaken to find them only too truly stated. And on March 24th "Mr. Hardy presented to the House, by command of His Honour, the Lieutenant-Governor :

"Return to an Order of the House of the 16th day of March instant, copies of all correspondence, papers and reports, between the Department of Education and William S. Summerby and O. Dufort, Inspectors of Public Schools, in the united counties of Prescott and Russell, during the last year, on the subject of Public Schools in the French settlements of these counties. Also copies of all reports respecting the alleged difficulties between the English and French ratepayers of the town of L'Orignal; or, upon the propriety of establishing a Separate School for Protestant children in that town. (*Sessional Papers, No. 48.*)"

Let the reader observe the last quoted, number *forty-eight*; for, on April 23rd, in Sessional Paper number *thirty-eight*, we read that the Legislature of Ontario was duly prorogued. When, therefore, the aforesaid correspondence, reports and papers shall see the light of day, we know not; nor is it safe to speculate upon its unknown contents. True, we have the word of the Hon. the Minister of Education, on Monday, April 18, given to the deputation from the Toronto Ministerial Association, that as soon as practicable the publication should take place; and in the meantime we can but wait, taking the Minister at his word. For this reason, and for others, the few scanty details which follow must be regarded more as a hasty compilation of what others have already seen and done, helped indeed by a very small amount of hearsay from trustworthy inhabitants, so far as the writer himself is concerned.

Before giving this compilation let the impartial reader remember the almost isolated position of the united counties; far off the main line of traffic—the Canada Atlantic, a lately finished railroad, barely traversing their south-western corner, and the projected Prescott and Vaudreuil Railroad a matter existing on paper—and the consequent absence of market facilities. Let him not forget to add thereto the thin population, the large extent of unavailable land compared with some of the richer south-western counties of the Province, and the deep snowdrifts, with the cold, long winter necessitating often the stabling of cattle for six months. Let him also add the almost total absence of mineral wealth, except the above mentioned springs, and here and there a little building stone, and that during the past century but seventy-seven per cent. of the available land has been settled. And noting the slight difference between them and

the Quebec western counties, he cannot fail to see how naturally, how easily, the rapidly-spreading Franco-Canadian has, so to speak, overflowed into these districts, buying out the more ambitious, westward-moving British farmer, or taking up hitherto unworked land. Nor must the character and habits of the typical *habitant* be forgotten. Happy, easy-going, kind, contented and virtuous; inoffensive unless provoked, temperate, though rarely a teetotaler, seldom a spendthrift, nay, thrifty and economical; intensely, tenaciously conservative of even the most trifling practice or custom of his ancestors, and, therefore, unwilling to change even for progress' sake, caring little for reading, preferring to gather the news of the day at store, hotel or church-door, faithful and devout in religious duties, regarding his curé as his guide in matters both spiritual and temporal—such, in few words, are his leading features. And as in this world good and bad are present in each one's character, so one must regret to note in the distaste for reading a well-defined mark of intellectual sluggishness—a mark which the writer has noticed among French Protestants as well as among their Roman Catholic confrères. And yet, on the other hand, we have had, and still have, man after man endowed with intellectual fire and vigour, men in all ranks of life; there is a Franco-Canadian literature of large extent and variety, whereof, to our shame be it spoken, we of Ontario are only too unfamiliar; there is, it is allowed, in religious matters, and in politics, a spirit of intellectual life. On the other hand, we are only too often confronted with the opposite state of things; and, taking a broad, general view, it is no denial of fact to say that on the whole there is not that push, that energy, that desire for improvement

so characteristic of the Briton, whether Celt or Teuton, or of his American or Canadian progeny.

And nowhere is this *laissez faire* of intellectual life more visibly borne out than in educational matters. For example, Mr. James F. White, Separatist School Inspector, in last year's report has the following:

"*French Schools.*—In some of the counties along the Ottawa River, but chiefly in the counties of Prescott and Russell, there are several separate schools in which French children form either the majority or the whole of those in attendance. In general, both the English and French languages are taught in all such schools; sometimes the principal part of the studies is in English, and the subjects taught in French are reading, grammar, composition and religious instruction—this, even when the great bulk of the pupils speak French as their mother tongue. In other cases the two languages receive about equal attention, and sometimes the greater part of the teaching and instruction is given in French. However, of the whole number of teachers in these French schools—thirty—there were but two or three who were teaching exclusively in French; nor are these, I am told, schools in which English has never been taught, but the scarcity of teachers capable of giving instruction in both languages led to the engaging of those who knew only French, as that is the language of all the pupils in these particular schools."

As to these teachers' qualifications, many of them have diplomas obtained from Boards of Examiners in the Province of Quebec; several have certificates granted by the local Board in Prescott and Russell, and others have only temporary certificates. There are several difficulties to be overcome before there will be properly qualified teachers for such sections. The first is the lack of schools

at which the French candidates can prepare for an examination to be conducted to a considerable extent in their own language. Many of those now teaching have prepared themselves either by private study or by attendance at some of the higher schools in Quebec Province. Then the amount of salary usually paid is too small to justify teachers to make an expensive preparation for the profession or to tempt them to remain long in it; in Prescott and Russell the average salary for a female teacher in the separate schools was, in 1885, but \$144 a year. Not alone in literary culture is an improvement needed in regard to these teachers, but in special preparation for their profession. Much good was expected to result from the training to be given in the French Model School, for the opening of which preparations have been made this year, and which will, I hope, be opened at latest in September, 1887. In this school instruction in the English subjects should be given as well as in the art of teaching; for only when the teachers have a proper knowledge of English can we hope for its being taught with satisfactory results. Now, while the general standing of these schools is not high, there has been a certain advance in some of them since my first visit in 1882, and they are in about the same state of efficiency as the French Public Schools in these districts.

To this may be added the words of the Hon. the Minister of Education to the Ministerial Association.

Concerning this point the honourable speaker said:—The Government cannot be held responsible for permitting a Frenchman living in Ontario to speak his own language or to teach it to his children. Dr. Ryerson made certain regulations in regard to text books which have continued without amendment to this

day. The regulations say that the French books adopted by the Protestant and Catholic sections of the Council of Public Instruction for the Province of Ontario should be the authorized text books in use in similar schools in Ontario. With the opening up of the eastern counties by railways, large French settlements sprang up to the exclusion of the Protestant settler, and a demand for French teachers became accordingly great. In conversation with my inspectors I was impressed with the fact that in several instances very little English was taught in a few of the schools in Eastern Ontario. In revising the regulations of 1885 (see reg. 24), I provided that English should be taught in every school in Ontario, and this was the first positive declaration of the kind ever made law. In July of the same year, I wrote Mr. Dufort, the French inspector for the counties of Prescott and Russell, calling his attention to the provisions in the law for the examination of French teachers, and suggested that the High School entrance examination should be the standard for a teacher's certificate for some time at all events.

In September, 1885, I issued directions for the teaching of English in all the French schools in the eastern part of the Province. These directions contained minute details of such particulars in regard to the elementary stages of the study of English, as would be useful and helpful to the teachers.

Finally, let the writer affix the results of his own scanty, limited observations. Among his informants is one who has been, and is, a successful teacher, and his testimony, while agreeing with that of others, is more valuable on account of his professional position. To save time and space it may be stated that they agree largely with the utterances of the

Minister. There is, however, to be stated that in the majority of the mixed schools, while the Ontario Readers are in use, yet for want of an authorized French Ontario series, the "Montpetit" readers of Quebec are in daily use also; that "the little Catechism" is not used by every one, that is, that its use is not obligatory, but that as a text-book in religious instruction it is used at the hour appointed in the regulations, by Roman Catholic pupils only; that the use of unauthorized text-books is condemned by no one more severely than by the Inspectors; and that the advance is no greater simply because, for the paltry pittances paid, no efficient teacher in both languages can be obtained. In this connection the fact that the two counties send, out of a school population of 12,104, 120 to the High Schools of Hawkesbury and of Vankleek Hill, or one per cent. of the school population, against an average of three per cent. for the whole Province, while the average yearly attendance of these counties is forty-three per cent. against the Provincial forty-four; all this must not be lost sight of as indicating small ambition to rise beyond and above the Fourth Book. To these few facts the writer must add that while farm-buildings and farming methods are in general not so commodious, nor so advanced, as those of Western Ontario, the school-houses are very often substantial and useful buildings.

Before terminating this necessarily imperfect attempt of a large subject, let us refer to the L'Original school trouble. This has been so ably described by *The Mail* correspondent, and subsequently by a private authority in the *Dominion Churchman*, and the two accounts agree so substantially that no apology is made for giving them here at length.

The Mail, Dec. 18th, 1886:—"As far as I can ascertain, the English in-

habitants of L'Original have always treated their French fellow-townsmen very fairly. Some twelve years ago the French petitioned for, and were allowed to establish, a Separate School, but after a short trial, in which they found even the teacher's salary to be a burden, they abandoned it and were again received into the English or Public School fold. A year or two later, so numerous were the scholars, and so flourishing the school, that it was determined to build a fine, large brick six-roomed school. At that time the English paid four-fifths of the school rates. Debentures to run for twenty years were issued to the amount of \$8,000. I think it was about this time that an arrangement was entered into that the two French trustees, who were then on the Board, should have the privilege of selecting a French teacher, who should teach that language exclusively to those who desired it for their children. The appointment was one that was in reality in the hands of the priest. Some eighteen months ago Mr. Howard Hay, head master of the school, was made aware that at that time the French catechism was almost the only book studied in the French division. He felt it his duty to inform the French teacher that he could not allow that in a Public School, and he absolutely forbade her to teach the catechism. This brought a perfect storm of French indignation about Mr. Hay's ears, which found its expression at the polls at the succeeding elections. The French found themselves in a majority at the School Board, and the inevitable result followed. Mr. Hay and his English assistant got their *cong *, or, recognizing the circumstances, took it; and their places were filled by the appointment of two French teachers. The chief of these, Mr. Famillard, a Parisian, was advertised by the trustees as capable of teaching both languages

The English parents were placed in a quandary. Some of them sent their children to the new teacher, but as they found the youngsters passed the time chiefly in making fun of the new master's pronunciation they took them away. Monsieur Famillard would say, "Spell tin," and the English class would one and all letter it—t-i-n—to be told each one in turn that they were wrong, and then the teacher would inform them that the spelling was—t-h-i-n. This was unbearable, and accordingly the English parents, under the provisions of the Act which provides that where the teacher of the Public School is a Roman Catholic the Protestants may demand a Separate School, put in a petition to that effect. The prayer of the petition was granted, but immediately afterwards a resolution was passed that the separatists must find new school accommodation. They would not be allowed to occupy a room in a building four-fifths of which had been erected with their own money, and for which they were still paying the debentures, and would be for the next ten years! At that time and now the two French masters occupy only two rooms out of the six. The English people, as may be imagined, were very indignant. They, however, abandoned the Separate School idea and in lieu thereof organized a private school, engaging Mr. Howard Hay as the master. They then proceeded to the school, prepared to take possession of a room therein by force if necessary. They were not opposed, and the school is running there to-day."

Dominion Churchman, April 14th, 1887:—"The Rev. D. J. Macdonnell, of Toronto, took the trouble to test the question, and at a meeting of ministers on the 4th April, read the following from a correspondent at L'Orignal, Ontario:—"The Public School house here is a large two-

storeyed brick building, divided into four commodious class-rooms having every convenience desirable. The majority in numbers of school population are children of French parentage. Until 1886 the head master was always an English-speaking person, having as assistant teachers one English and one French, the latter such as the priest of the parish might approve, and English and French were taught as the pupils or parents desired. By the trustee election in January, 1886, the French acquired a majority on the Board and assumed control of the school, declined to consider the wishes of the English-speaking people, engaged a Frenchman, one Famillard, for headmaster, and a Miss Miellette for assistant, both French Roman Catholics, and neither capable of teaching English, even the elementary branches. The English-speaking Protestants during the summer months obtained leave and organized a Protestant Separate School, which has been in operation since the commencement of the current year. The French are running the Public School. Their teachers are a Miss Miellette and a Madame Rouilleau. Neither is capable of teaching English, although the first named can read and speak it imperfectly. They are teaching under special permits, and I believe some of the French children are supposed to be taught the rudiments of English by Miss Miellette. For the pupils learning English the authorized books are used. For the French pupils the books used are A. N. Montpetit's series of graduated readers, approved of by the Council of Public Instruction for the Province of Quebec. I have procured and send you by book post a set of books used in the Public School here, and I would ask you to look over the First Book, and say whether it is consistent with the supposed non-sectarian character of the Public Schools of Ontario."

The first book we have already described, it is simply the primer of the Roman Church, which is being substituted in Ontario schools for the authorized text books."

Regarding the above, in the absence of either any official report from the inspectors, or of any counter-story, let it be said—

First. That in L'Orignal, as in the united counties generally, the Franco-Roman Catholic membership far exceeds the combined membership of all other religious bodies, the entire Roman Catholic membership being 588 out of a total of 903, according to the census of 1881, while in the united counties 30,130 Roman Catholics are shown out of the total 38,022 population. If one may speculate, he may say that perhaps on the ground of mere majority representation the French Roman Catholics consider themselves entitled to special privileges in school matters. At the same time it appears to our benighted minds that to drive out a minority from their own building, to virtually dismiss a competent principal on the ground of his nationality, and to refuse the petition for a Separate School, is unwarrantable and unjustifiable on any mere majority principle.

Secondly. That even supposing the incompetency of the principal, it is a great mistake to select a born Frenchman to teach English even to those of his own countrymen, and this is said without any reflection on the ability or competence of M. Famillard or his colleagues. The reason is a plain and a simple one. Composite as is our English tongue, and containing nearly all the distinctive foreign

sounds of letters, *e.g.*, the French *u* in the Scottish word *guid*, the German *ch* in the Scottish word *loch*, and in the Irish *lough*, it is far more easy for a cultured English-speaking person to acquire the peculiarities of French or of German, and to teach even in these languages, than for a Frenchman or a German to do the same with regard to our own tongue.

Thirdly. That if this agitation bring before the teachers of Ontario the necessity for improving the study of "Moderns," as we have improved the branches of Mathematics, English and Drawing, something will indeed have been gained. If it tend to show us that to hold our own in competition with the French of the Eastern and of the Western (Essex and Kent) counties, we must think in French, if it tend to show us that the Germans of Waterloo, South Grey and Bruce, though not so numerous, yet clinging as tenaciously to their language and their customs, have claims also for their noble tongue not to be disregarded; and if the result be the improvement in the better study of and the popularizing of these two great languages, even these few pages may not have been written in vain.

Lastly, the writer craves a brief space for a final apology for so incomplete and so fragmentary a treatment of such an interesting subject. He desires to state that his endeavour has been to treat the few facts at his disposal fairly and impartially, without either fear or favour of the powers. that be, without seeking to attack or to defend, and without obtruding his own private views as a citizen and as a teacher on the generous public.

GRAMARCY PARK SCHOOL AND TOOL-HOUSE ASSOCIATION
AS A MODEL INDUSTRIAL SCHOOL.

BY ARCHIBALD CUTHBERTSON, NEW YORK.

[Written for THE CANADA EDUCATIONAL MONTHLY.]

THE Gramarcy Park School and Tool-House Association, situated on 8 and 10 Gramarcy Park, or 104 East 20th Street, New York City, was started chiefly by Mr. G. Von Laube, a gentleman of superior intellectual abilities, and advanced principles regarding education. The great aim of this school is to fill a long-felt want between the Kindergarten and Polytechnic Colleges. The work of the school is twofold, viz.: to make young people much more useful in after-life, and also to give them their education more by understanding the structure, or actual manufacture of many objects, animate and inanimate, than by mere theories of any kind. The concrete, the objective, the actual existing or living thing should be studied during much of a child's earlier life, and not the abstract of dry literature, as used largely in a child's education previously.

Much may be said in favour of the old system of teaching, and much will be gained from the new; but seeing what has been the kind of men produced by the old system we certainly cannot censure it, but agree with the thinkers who hold that the old kind of instruction was good enough as far as it went, but what we must now do is add the new practical to the old theoretical.

As this is a new departure it has been opposed for various reasons, and one is because the memory and imagination are not going to be properly cultivated by this kind of education. The settlement of such a question we may leave to ethical philosophers.

Our personal experience on this subject is that the leading power in a child's mental faculties is predisposition, and if a child has an intellectual tendency for mechanical work and inventing, the suggestions of the imagination will be decidedly of such a kind; if the mental bias is for mathematics, memory and imagination will follow the paths which lead in that direction. So on we might go through a long catalogue of experiences. We have known farmers, successful ones too, who, although they had years of experience, could not use a saw properly, but were perfect in a knowledge of agriculture, and that was all they tried to do. We have known others who, although on farms all their lives, yet were conspicuous failures as farmers, but were good mechanics, and knew, in this respect only, what they had "picked up." Robert Burns, although bred to the business, was a conspicuous failure as a farmer, but a success as a poet—to the latter calling, however, he had apparently been born. There need be little dispute about how a child should be taught. Nature herself has settled that question, because the world is full of objects and these have taught the child first. But now we have reached the stage where discussion may begin, viz.: Does a child need to be able to *make* a thing, or understand the structure of a living body before its knowledge of that thing or organism can be called *satisfactory*? Certainly, for callings or trades, this is necessary, as the following examples may show. An artist had painted a beautiful sea-

scene, which was hung up to be publicly viewed. Two sailors happening to come along, one exclaimed to the other, "Shiver my timbers, Jack, if there ain't a ship a-runnin' on to land with the wind off shore!" A short time ago the writer was looking at a beautifully illustrated Christmas gift, in which there was a picture of a man using a flail. If ever the man finished the stroke which he was making when the picture was taken, he would strike himself squarely on the back of the head; for he, like every other greenhorn, was using the flail as one would use a whip, while the proper mode is to cause the supple to revolve at right angles to the long staff. And, further, who has ever seen, in an American or other picture of whatever quality, a proper delineation of an American chopping-axe handle? This question was put to a young artist who had often used an axe, but neither had he ever seen a picture of such an implement. There does, therefore, seem to be benefit gained by children understanding the structure of manufactured articles, and also of plants and animals. But whether or not children should be taught trades by the State is a question which may be debated, and prominent amongst objectionable points are the following:

1st. *Financial.* — The Gramarcy Park School and Tool-House Association has been provided with engine and machinery for several kinds of wood-work, printing, and some kinds of iron-work, besides a chemical laboratory, and apparatus for photographing. This, it will be seen, provides for only a few of the many callings in which people may engage for the purpose of earning a living. Suppose, then, that we instance a city like Toronto, and having estimated the number of boys attending the various schools, let those who know the numbers figure out what the cost would be of supplying power by which a moderate amount of machinery could

be bought, provided with buildings and operated; then the cost of tools for, say fifty, or any larger number of boys. Suppose we take wood-work, what would it cost to provide tools and machinery sufficient to set fifty, one hundred or more, boys at even the primary branches, or at printing, or at iron-work of any kind?

2nd. *The physical powers of the boy.* — This we think a serious barrier, because the average boy leaves school when he is about fourteen, and boys are not generally prepared to begin to learn many trades till they are sixteen years of age. What could a boy under fourteen do with carpenters' tools, or blacksmiths' tools? If what is taught is going to be of value it must be thorough, not toying. Another objection here is, if the work is going to be continually that of apprentices can it be disposed of, and if not, we shall have to estimate the value of material continually wasted?

A third objection is the improbability of a boy being able to select his future calling. There are various inducements which cause a boy to be too hasty in his choice. Almost every boy is fond of using a pocket-knife, and the desire to saw, plane and chise wood is almost as universally prevalent. How the average boy is inspired to drive a horse and be a rail-roader. But after one has gone back and forth over the same section of a road twice each day during a month, how monotonous and intellectually insipid it becomes to be a railroader. Most boys are liable to be trapped into an injudicious choice of calling during an ambitious outburst of emotion. For that reason great care should be taken that the boy's judgment be not biassed till he is of the age to make a proper selection. This free and Republican continent is continually giving instances of geniuses being discovered even during mature years.

Another plea for asking the State

to teach children industrial branches of instruction is, because few mechanics are being turned out of American shops compared with the number required; hence several prominent legislators have suggested and even recommended the State to undertake the teaching of industrial branches. If the State had previously done so, and having ceased, produced the results which we now have, it might be shewn that a renewal of such instruction was again necessary. We think, however, that there are other reasons which will in some measure account for the scarcity of American-trained mechanics. First, a mechanic or labourer is more or less despised because of his calling. A bank clerk with a salary of four dollars per week is considered much superior, socially, to a young mechanic earning two dollars per day. Then there are many other means of accumulating money much more quickly than by tradesmen's wages, hence apprenticeships are avoided. "A big thing," "a great scheme," "a thing in which there are millions," gold or other mineral mines, timber limits, land speculations, "corners," and "combines," are the great desired bread-winners of many on this side of the two oceans. Last, but not least, the average human being born in this western hemisphere does not love bodily toil of any kind for *its own sake*.

Again, mechanics themselves are partly to blame, because where they can they restrict the number of apprentices to be employed in shops. On the other hand, some firms keep continually a large number of apprentices, and employ but few journeymen, and regularly discharge their apprentices when their time expires. If men are going to find difficulty in securing employment after having learned a trade, they certainly will not risk throwing away the most valuable years of their lives with such prospects. As was remarked previously, the work

of this institution is twofold: first, to teach useful and practical knowledge, which is the *subordinate* aim, the chief one being to impart the most necessary kind of instruction in a natural manner. This theory suggests some difficulties, viz., is it *necessary* that children should be provided with tools by which they could construct articles as part of their intellectual development: and, also, would it be *prudent* to spend money for such a purpose since so little is known of results? There must be a limit somewhere regarding a child's powers and time, and since they cannot make or know everything, we would suggest treating all subjects alike. As a good general aim in this direction we would suggest taking children occasionally to factories of various kinds. This, however, could not do much more than to create wonder in the mind of the average child, and more good could be done by using models and explaining, and if models cannot be got then pictures and drawings should be used. Such a system of instruction should be adapted to the circumstances of the pupil. Children raised on farms would not need to be instructed about agriculture, or the implements used in such work, but would be much more interestingly instructed by a description of an elevated railroad, or the great New York and Brooklyn bridge. Then a newsboy who scrambles for existence around Park Row, New York City, might not be much interested by a description of New York Post Office buildings, or even of the New York *Herald* building; but might learn something new if he should see the vines on which those huge squashes grew which are exhibited on Fulton Street every autumn. Or such a boy might be pleased and profited by seeing small patches of grain growing, and, further, might be delighted by seeing miniature machines in the various operations of agriculture.

How embarrassing it is to be merely

a listener in a conversation about some work or thing, but of which one is ignorant. The writer once heard a bright young city lady ask what a "steer" was, when in a company where farm live stock was the subject of conversation. Once a New York City grocer's wife, who dwelt on Sixth Avenue, near Seventeenth Street, was asked where their best qualities of peaches grew, but she blushinglly replied that she did not know, neither did she know whether they grew on bushes or vines.

Hence we think there is no doubt that models, pictures and drawings of animals and things of which a child cannot get a knowledge because of circumstances, would be most valuable, and for a common sense course of instruction is absolutely necessary; but whether or not a child should be taught a productive calling while going to school, or whether or not the Government should undertake the task and expense of such instruction, are questions which can be solved only by sound reasoning, and very judicious experiments.

The conclusion of the whole matter appears to be that a child's education should be guided by the three conditions: health, natural instruction, and a proper means of imparting. Health will take care of itself if the pupils get plenty of activity during school hours. Children do not now know too much about reading, writ-

ing, spelling, arithmetic, grammar, etc., when they leave school at about fourteen years of age; so there cannot be much curtailing in these subjects. It might, however, be suggested that leisure be devoted to explaining objects in nature, and another good means of using recess would be for the teachers to go with the pupils either to the museum, or, if so located, on little botanical and other excursions. We question if the average school is benefited by a laboratory, but about a museum and library there can be little doubt, the museum to be a perpetual receptacle for curiosities which the children themselves might bring.

A few words in conclusion about this old abuse of setting children at the work of "abstraction," which is said to be so injurious to the expanding mind. Let it be distinctly borne in mind that a young human being has an *intellect*, the work of which is "abstraction." All knowledge is the product of abstraction. Whether it is an infant of a few days old trying to distinguish the difference between light and darkness; or a venerable sage deeply engaged in trying to solve some great difficulty respecting the good of humanity during both time and eternity, all is abstraction. The great precaution is, do not cause a child to reason about something which is evidently *beyond* its mental grasp.

NEW YORK, April, 1887.

NOTES FOR TEACHERS.

I do not know if you will think it permissible in a man devoted to one subject if I say that in my belief this Victorian epoch will be distinguished in history as the age of science. That is no mere expression of scientific fanaticism, but I am convinced it will be the judgment of posterity; for that which has changed the world, changed

the face of nations, changed the possibilities of political arrangements, has been the development of physical science during the last fifty years in a manner which is perfectly unexampled in the whole previous history of the world. It is not unnatural that we men of science should be somewhat proud, however little each and every

one of us may have contributed towards the vast consummation. But, as in all human affairs, this has its Nemesis. For the accumulation of scientific work in consequence of the well-organized scientific activity of the present time is so prodigious that we individual workers are becoming swamped under it, and more and more hopeless of being able to master anything but a small and fractional portion of the whole. We labour under this disadvantageous alternative—that if we endeavour to grasp too much we become superficial, and if we are very thorough over a little we become narrow. And I think one of the greatest dangers which besets the scientific world at the present time is the danger which arises from the necessities of the case, of men becoming specialists occupied with a comparatively small field. The remedy for this evil—and a very great evil I think it must be—lies in the recognition which this Academy, at any rate, has always accorded to the great truth that art, and literature, and science are one, and that the foundation of every sound education and preparation for active life in which a special education is necessary should be some efficient training in all three. At the present time, those who look at our present system of education, so far as they are within the reach of any but the wealthiest and most leisured class of the community, will see that we ignore art altogether, that we substitute less profitable subjects for literature, and that the observation of inductive science is utterly ignored. I sincerely trust, Sir, that, pondering upon these matters, understanding that which you so freely recognize here, that the three branches of art and science and literature are essential to the making of a man, to the development of something better than the mere specialist in any one of these departments—I sincerely trust

that that spirit may in course of time permeate the mass of the people, that we may at length have for our young people an education that will train them in all three branches, which will enable them to understand the beauties of art, to comprehend the literature at any rate of their own country, and to take such interest not in the mere acquisition of science, but in the methods of inductive logic and scientific enquiry as will make them equally fit, whatever specialized pursuit they may afterwards take up. I see great changes; I see science acquiring a position which it was almost hopeless to think she could acquire. I am perfectly easy as to the future fate of scientific knowledge and scientific training; what I do fear is that it may be possible that we should neglect those other sides of the human mind, and that the tendency to inroads which is already marked may become increased by the lack of the general training of early youth to which I have referred.—*Prof. Huxley, in Educational Times.*

HOW WE TEACH THE LITTLE FOLKS TO CONSTRUCT SENTENCES.

Teacher—Second Grade, place slate in position for writing. Now, children, I am going to call the names of some letters, and I want to see who can call them when I am through—*a, e, i, o, u.* (Hands up). I am glad everybody can tell them. We will hear Sallie.

Sallie—*A, e, i, o, u.*

Teacher—Very good. Now, I shall write them on the board, and then I'll tell you a story about these letters. Now, just think how queer it is, when we talk or write about anything that its name begins with one of these letters, we can't put *a* before it, like I do when I say *a* book; but we must put *an* before the name. Now, who can tell me what

I have? (All hands up again).

George may tell us.

George—Apple.

Teacher—If I were going to tell you that Maggie had a bird, I would say something besides bird, wouldn't I?

Mary—You would say, Maggie has a bird.

Teacher—That is very good.

George may try again.

George—You have *an* apple.

Teacher—Why did you say *an* apple?

George—Because apple begins with *a*.

Teacher—That's right, and was said so nicely that I must write it on the board. I wonder if anybody can tell me what this is?

Henry—That is *a* ruler.

Teacher—Why did you say *a* ruler?

Henry—Because ruler don't begin with any of the letters on the board.

Teacher—Henry has the correct idea, but his sentence is not good. Who can improve it?

Minnie—Because the word ruler does not begin with *a, e, i, o, u*.

Teacher—That is better. But, do you mean, Minnie, that the word ruler does not begin with all of these letters or that it does not begin with any one of them?

Minnie—That it does not begin with any one of them.

Teacher—Well, we should say: Because the word ruler does not begin with *a, e, i, o* or *u*; and we will have a lesson some day about the reason why we put that little word *or* before the last letter. Now, I will give you fifteen minutes to write every word you can think of that begins with *a, e, i, o* or *u*.

These words I take down in a scratch-book, write them on the board next day, and have the children make sentences about them. I always get the objects, if possible, but I never exhibit or speak about more than one object, or, at least, one class of

objects at a time. If the object you select be an apple or an envelope, the greater variety you can get will arouse the most interest. I generally get from four to eight sentences about each object, descriptive of its shape, weight, size, colour, uses, etc.

I have found no trouble in teaching them the correct uses of *is* and *are*, and similar words in like manner. With a vase of pretty flowers on your desk (any child will be interested in flowers, for boys love flowers just as well as girls do), it is not hard to get them to understand that one rose *is* pretty, and that two, five or any other number except one *are* pretty.—*Texas School Journal*.

THE TAUNTON SCHOOL WHIPPING CASE.

The case of the boy Rockett against Henry F. Burt, principal of the Bay Street School in Taunton, wherein Burt was fined \$15 and costs in the District Court, came up in the March term of the Superior Court on appeal, and after a full hearing was decided by the jury returning a verdict in favour of the teacher. The case has caused widespread interest, because of the principle involved, and, briefly stated, was caused by Mr. Burt whipping the boy at the request of a sub-teacher, who had been unable to punish him herself. She had told him previously that unless his spelling lesson was perfect on a certain day, or, rather, if he missed a certain number of words, she should punish him, and probably felt bound to carry out her promise. Mr. Burt made no enquiries into the matter, but took the boy for punishment, and, as was alleged, whipped him severely, leaving black and blue marks.

The charge of the court (Judge Dewey) to the Jury was interesting and instructive. The judge said that the defendant, as principal of a public school, had the right and the duty to

maintain proper order, discipline and government in the school, and this would include the right to see that pupils performed, to a reasonable extent, the tasks assigned to them as pupils. To do this the defendant had the right to administer reasonable castigation, if in his judgment it was necessary, and he could be considered reprehensible in this course only if guilty of unreasonable and disproportionate violence and force. In the case before the jury the question of whether the punishment, under the circumstances, was, or was not, excessive, was the question for them to decide.

Moreover, the pupil in the case had not the right to judge as to whether he should be punished or not. The law has not committed the discipline of the school to the pupils individually or collectively. It has entrusted that authority to the principal, at the same time holding him responsible for its proper use. And when a teacher, using his best judgment, and under the responsibilities of his office, deems it necessary to punish a scholar, that scholar has no warrant in law to constitute himself the judge of his own case, and defy and resist the authority of the teacher; it is his duty to submit to the punishment, not being plainly unlawful in kind or degree, which the teacher has decided to impose. And if the pupil is insubordinate and resists while the teacher is reasonably attempting to administer punishment, that fact would, or might, materially affect the manner and extent of the punishment that it would be proper to inflict. The law does not require a teacher to measure his strength with a pupil, and go through a strenuous physical struggle in each instance of discipline.

The school is one of the most important institutions of society, and one of its objects is to establish in the mind of the young the principle of

obedience to all rightful government and law, and respect for it. "Is not the Public School the place where most of the people receive their education and training for good citizenship? Is it not essential that reasonable order and discipline should be maintained there? Is it not a part of that order and discipline that pupils should be required to learn proper lessons? Can such order and discipline be enforced in all cases without the use of physical punishment?"

With such calm and judicial words in their ears, it is not strange that the jury found a verdict for the teacher in the above case.—*Journal of Education* (N. E.)

THE CLOSING ADDRESS.

Dr. Grant next spoke to the gentlemen of convocation as follows: I thank you for having come, at this crisis in the history of Queen's, from so many parts of the country to testify your affection and loyalty. Usually we expect audiences more select than numerous when it is understood that money is to be asked. But, though it was well known what would be the chief topic at this convocation, we have had more graduates present from a distance than ever before. This shows that the sons of Queen's can stand fire. We understand our position as a University. We are recognized by the public as the University of Eastern Ontario. We claim that the government that represents the people should acknowledge our position. The various religious denominations in this section of the country recognize us in the most practical way—by extending pecuniary aid and by sending their sons to study here. Presbyterians are eager to give their children a liberal education, and hence we find that nearly half the students in University College have always been

Presbyterians. The proportion attending Queen's is not much larger. About half of our students belong to the Methodist, Anglican, Roman Catholic, Congregational, Baptist, Lutheran and United Brethren Churches, and to the Salvation Army. We give the most explicit assurance that Catholic as well as Protestant students, "*Tros Tyriusque*," have had and always shall have their religious belief scrupulously respected at all times. Not only so: we give the assurance, dear to every true parent, that our connection with an ancient historical church enables us to surround the University with religious influences of unspeakable value in

moulding character, while at the same time that connection does not impair to the slightest extent our self-government as a University, and our ability in consequence to consider every question from a purely educational, instead of from either a denominational or party point of view. I need say no more. If people do not understand our position, it is because they will not. People who are slaves to words will still think that they have settled the whole question by calling one institution denominational and another provincial. We look to facts, and we know that Queen's is national and catholic. Knowing this, we appeal to Canada.—*Coll. Journal.*

PROFESSOR FREEMAN ON FEDERATION.

PROFESSOR FREEMAN (who was warmly received) took as his subject "Greater Greece and Greater Britain." The name Greater Britain, he said, was one which of late years had become strongly familiar. The Greater Britain, major Brittany, was doubtless as old as the twelfth century. We perhaps sometimes forget that besides this island of Britain, there was another Britain, which we commonly called Brittany. In Latin and French the names were the same; and the island Great, or Greater Britain, was so called simply to distinguish it from the lesser Britain of the mainland. The Greater Britain was the older, was the mother country, and the lesser was the colony. Britain of the mainland never took that name until it was settled by the Greater Britain of the island. Now, however, the phrase "greater" applied to the younger Britain, the aggregate dependencies of Great Britain all over the world. As there was a greater and a lesser Britain, so there was, perhaps not a lesser, assuredly a greater Greece. Greater Greece, like Greater Britain of

modern times, was an assemblage of settlements, which deemed themselves to become greater than the mother country. But the name Greater Greece by no means took in all the scattered Greek colonies all over the world; it was confined to a group of them. The name seemed hardly to spread from Southern Italy to the neighbouring Sicily. Indeed, the name had a peculiar fitness as applied to the Greek settlements of Southern Italy. But there was a difference in the case of British settlers. The men of the vast mainland of North America became mainly European, not by the adoption of the earlier people, but by the driving out, by the gradual vanishing of the earlier people at the hands of the invaders. This difference was one which followed directly from the difference in scale in the world in which the old Greek settlers lived and the world in which the modern European natives lived. This difference in scale was a thing which must be remembered at every step. Those among whom the Greek settled were mainly men of the same great family

as himself—men capable of being raised, by a swifter and slower process, to his own level. The nature of man was the same whether he had a wider or a narrower sphere for his work. The narrower sphere had some advantages over the wider. It was in small communities, where men were brought closer together, where every man had a personal share in the political life of the community, that the faculties were raised to their highest levels and sharpened to the finest point. It was, from a political point of view, the great merit of modern scientific discoveries which had enabled people of a great community, or of a nation or kingdom, to have that direct personal knowledge of the political life of the community of which they were members, and that direct personal share in it which once could not be had save where the State was confined to the territory of a single city. Instead of despising earlier times, because they had not printing, railways and telegraphs, let them rather say that it was by these inventions that they raised large States to the level of small ones—that it was by means of these inventions Englishmen of our day had become far more like the Athenians in the age of Pericles. Even fifty years ago the utmost that an ordinary Briton could do was now and then to give a vote, if he had one, at the Parliamentary election, and to read or hear most meagre accounts of what was going on in Parliament and in public life. Now, however, we saw and heard our leading men almost daily. They walked before us as the leaders of the Athenian democracy walked before their fellow-citizens. We had a share in political life, only less direct than the share of the Athenian freemen—a share which our forefathers, even two or three generations ago, never dreamt of. Did the popular phrase

“Greater Britain” take in the United States of America? If he rightly understood the phrase “Greater Britain,” it was sometimes held to have the same meaning as the phrase “British Empire.” If so, assuredly the United States did not come under this definition; but sometimes the phrase “Greater Britain” seemed to be used as bearing the same meaning as the federation of the English-speaking people. Now, the people of the United States surely formed so large a part of the English-speaking people that a federation which was to include all the branches of that people was strangely imperfect which left out a branch so fruitful as that which spread the English tongue from ocean to ocean. Again, if the phrase “Greater Britain” meant the “British Empire,” it must include India, which was the head and front of the Imperial power of Great Britain, but which could hardly be looked upon as in itself a Greater Britain. If Egypt and Asia were not Greater Greece, India was still less Greater Britain. Greece looked somewhere else for her Greater Greece, and Britain could not fail to look elsewhere for her greater self, and not where the influence of Britain took the shape so largely of dominion and so slightly of assimilation. If the phrase “Great Britain” answered to the federation of the English-speaking people, it took in the English-speaking people of America, Africa, Australia, and other parts of the islands and continents of the ocean which were not of the same political condition as the United States. He was not arguing for or against any scheme of federation. He wished simply, as a matter of accuracy, to know what was really meant. The difficulty with respect to the federation of the English-speaking people was that the great part of what it was fashionable to call

the British Empire did not consist of English speaking people, and that a large part of the English-speaking people did not form part of the British Empire. The existence of India, the existence of the United States, surrounded them with difficulties at every step. Then, again, what was Imperial Federation? If it was Imperial, how was it federal? If it was federal, how was it Imperial? Was the present German Empire to be a type? Did Imperial federation take in India or not? Let them be careful how they answered. If the empire of India was left out of the federation, how was the federation Imperial? If, on the other hand, the Empire of India was taken into the federation, how would that be a federation of the English-speaking people? He was not sure that he always knew the meaning of the words "Empire" and "Imperial," but there was one part of the Queen's dominions where she bore an imperial title, and it would be strange if, in forming an Imperial federation, Her Majesty's one Imperial possession should be the only part of her dominions left out. If, on the other hand, the empire of India was taken into the federation, they might ask how that would be a federation of the English-speaking people, or a federation at all? Where would Great Britain, or Australia, or Canada, or South Africa be alongside of such a yoke-fellow? They might ask what was to become of the white-skinned European Christian minority,

out-voted, as it must always be, by millions and millions of dark skinned Mussulmans and Hindoos, who could hardly be reckoned among English-speaking people? The kingdom of Great Britain had been accustomed to hold the same position in the world with the United States of America. Were they to give up that position and sink to the level of the State of New York or of Delaware? for that was what federation really meant. Hitherto the Parliament of Great Britain—that was, the King, Lords and Commons of Great Britain—had been a sovereign assembly which knew no superior, and had no limit to its powers. If Greater Britain became one federation, the Parliament of Great Britain would cease to be this; it would be a Legislature like the Legislature of the State of Rhode Island, which might not meddle with the higher range of subjects given over to the federal power. It might even be that the Parliament of Great Britain would cease, and that England, Scotland and Wales would all enter the union as separate States. He was not arguing for or against that, but he asked those who talked of Imperial federation to weigh all these chances, and see how far they were consistent with the tune of "Rule Britannia." As a matter of fact, no real federation was ever founded in the fashion now contemplated, for he could not look on the modern German Empire as a federation in more than form.—*Scotsman.*

LIFE is a burden—bear it ;
 Life is a duty—dare it ;
 Life is a thorn-crown—wear it ;
 Though it break your heart in twain ;
 Though the burden crush you down,
 Close your lips—and hide your pain,
 First the Cross and then the Crown.

CULTIVATE faculties in their natural order ;
 first form the mind, then furnish it.
 ACTIVITY is the law of childhood ; accus-
 tom the child to do, and educate the land.
 DUTY and to-day are ours ; results and
 futurity belong to God.—*H. Greeley.*

CORRESPONDENCE.

THE NEW MANUAL OF HYGIENE
FOR SCHOOLS, BY THE ONTARIO
BOARD OF HEALTH.

To the Editor of THE MONTHLY :

SIR,—It is surprising that some critic, either doctor or teacher, has not before this time undertaken the duty of reviewing the new "Manual of Hygiene for use in Normal and Model Schools," by the Ontario "Provincial Board of Health," and given the public the benefit of the many glaring defects in this long promised work, which is to supersede other and better books. I am not, sir, even an amateur in the art of criticising, but if you will grant me space in THE MONTHLY, I shall endeavour to draw attention to some of the defects alluded to.

The book, as a whole, seems to be less a manual of hygiene, the matter in which it is intended shall be conveyed, through teachers, to growing youths for their individual benefit, than it is an imperfect work for the use of health officers, a manual of sanitary science or public health. For example, a good deal of space is given to the "disposal of refuse"—to drains, sewers, closets, traps and the like, and the reader is very properly told that "the skin should be kept free from obstruction," and also, but more questionably, that "sponging the surface of the body with cold soft water, to which *has* been added a little *spirit* or liquid ammonia, will serve a good purpose" (the italics here and elsewhere are my own), but there is not a word setting forth the

absolute necessity, or even desirability, of a daily, or even weekly, WASH all over the surface of the body, nor as to how or when any such process as the disposal of the surface refuse of the body should or might be best accomplished. Again, although space is given to quote Dowie, a "celebrated Scotch shoemaker," as recommending that "stockings be worn with a separate covering for each toe, as gloves are made with fingers," it is not even recommended that the stockings or any other underclothing should be frequently WASHED. Everybody—everybody who has, in a public school, inhaled the foul air from the great unclean—knows that one of the first things which should be taught to all pupils in our public schools is the necessity for personal cleanliness. Much space, too, is given to the important subject of pure air and ventilation; but I have not been able to find one word about the importance to growing youths of full and free breathing of the pure, fresh, out-of-door air, nor about the desirability of expanding and developing the lungs for the purpose of full and free respiration of the pure air, both of which points are well known to be very worthy of attention. Nor is there a word on the special necessity for ventilating the bedroom, so often kept closed, and where one-third of one's life is spent. Indeed, less than five lines, all told, are given to the important subject of sleep, with all its various conditions and environments—the bed, the room, the best time to sleep, etc.

Still less space is given to the subject of masticating and grinding the food, although I find a formula given for "the best substitute" for "breast milk," and for preventing indigestible curdling of milk and acidity in infants—properly a doctor's business. More than half a page of the work is devoted to what are nothing less or more than instructions to "consular and other agents at *foreign ports*" in relation to quarantines and "preventing the *importation*" of infectious diseases; while nowhere are any special or practical instructions given, for children, parents or teachers, relating to means by which individuals may often avoid infection, nor is the importance of exercising great care in this regard anywhere strongly urged or dwelt upon.

As is generally known, the book is the composition of more than one individual author, and it is plain that there was no one mind to see the end from the beginning, plan the work, and arrange it in a way convenient to be grasped and taken in by a learner. The various subjects are jumbled together, and the whole is quite devoid of any architectural design or plan. A good deal of the wording is very obscure, often owing to bad punctuation, and much is left for the reader to conjecture. It manifests, indeed, a very great want of clearness and perspicuity, and contains many positive and misleading inaccuracies. For example, in section 449 we read: "Potato and other flour besides wheat are sometimes used to adulterate bread." This needs no comment. Section 437: "Diseases connected with food may result from excess, impurity or deficiency of it." Foods are probably as often diseased as are human beings. In this section, doubtless, diseases of the human body are *meant*. In the next section: "Diseases often arise from *altered quality of meat*, such, for

example, as may be caused by epidemic pleuro-pneumonia, etc." Diseases in the human body would hardly arise from "altered quality of meat" unless the meat were eaten; though the smell of the meat might possibly cause sickness. Who but one already knowing all about the subject could understand section 288? Between "individuals communicating and receiving the disease." Do the same individuals at the same time both communicate and receive it? A beginner or learner could only understand from this section that only those diseases "capable of transmission" "through the medium of the atmosphere" constitute one division of the diseases referred to. How about those diseases which are communicated by means of water, milk and other foods? And so likewise it is throughout the book.

Again, there are many parts so misleading as to be of quite a serious or even dangerous character. One is in section 307. It is there stated that "cases of Asiatic cholera will naturally be brought at once under medical care. The severe purging, vomiting, cramps and prostration will be sufficient indications to those who wish to give" prompt aid, etc. Now, in the rules and regulations sometimes given to the public for preventing the spread of this alarming disease, it is advised that the earliest symptoms are not infrequently mild, like in a case of simple diarrhoea, and that when an epidemic of cholera is prevailing, any one showing the slightest symptoms of diarrhoea, which are often premonitory of the graver disease, should receive prompt attention. In section 649, on schools, we find "Children having any contagious disease, or other communicable affection" (whatever this means), "should not be allowed to 'transmit' such affection by the careless use of towels. Each of such pupils should.

provide a towel for *himself*." Now, I thought any such children were not allowed to attend school; it used to be so, it appears to me, towel or no towel. In section 60 one is led to suppose that it is only wall papers of "gorgeous hues" that are liable to be dangerous from containing arsenical colouring matter, when it is a well-known fact that the most chaste and delicate tints may contain much arsenic, and be equally dangerous.

In section 330 is a list of "disinfectants." Some of these, as recommended, are now known to be not disinfectants at all, and to be quite unreliable, hence dangerous to be depended upon. Certainly the eleven disinfectants given might be reduced to about three—heat, corrosive sublimate and chlorine fumes. In all the lists of disinfectants I am able to find, this one alone excepted, abundance of fresh air has always been named and recommended as a most important one. The principles of disinfectants, or the uses or action of disinfectants, are not explained at all, although space is given to so many other things of much less consequence:

Finally, in relation to water and its purity, the reader is told that, in those cases where a physical examination gives only negative evidence, chemical examination must be made, and

then four or five pages are devoted to chemical tests, all of which I think entirely lost; for if the source of water leads to suspicion as to its purity, a portion of it should be sent to an expert, as I think all well informed physicians will advise. No other than one well experienced in "testing" is competent to "pass" a suspected water, as otherwise valuable life might be thus jeopardized or even lost thereby. And moreover, and most important of all, chemical tests have been long known to be unreliable, and will not reveal the presence in water of infectious germs. All suspected water should certainly be submitted to the biological test—the gelatine culture and the microscope. In no other way can the presence of infectious organisms in water be made known. Yet not one word is there in this manual bearing upon the most important point.

Is it not too bad, sir, that a book like this one, to the exclusion I believe of all others, should be forced upon teachers and students; or, indeed, that this Province should spend many thousands of dollars yearly upon a Board of Health which could put forth such a work, and for every copy of which teachers and others must pay \$1? Yours, etc.

M. D.

EDITORIAL NOTES.

IN this number of the Magazine, Drs. McCurdy and Eaton press the claims of their chosen studies on the attention of school and collegiate authorities, as well as on the reading public generally.

VIVAT REGINA.

A PERSON by the name of William O'Brien visited Canada for the avowed purpose of driving the representative of the Queen from his high

office, thus causing strife and much ill-will among our people. He paid us his visit unasked, in the face of the protests of the true friends of his own country, and he has departed from us unblest. In connection with this unwelcome visit two meetings were held in the Queen's Park, Toronto. The first—large (15,000 said to have been present), orderly and influential, presided over by the Mayor of the city,—was called in the interests of law and order, and

goodfellowship, among our people, and fully realized the objects for which it had been convened. The other meeting was convened to afford an opportunity to Messrs. O'Brien and Kilbride to say what broug them to Canada. At the second gathering there was quite a number of people, but from every other point of view the meeting was a total failure. In the immediate vicinity of the platform from which the speakers addressed the crowd of excited people, the trees were filled with boys and young men. We shall not soon forget the vim of the shout which greeted "Farmer" Kilbride when he attempted to speak on the alleged grievances of his class in his own land. The peculiar sound, varied by many a note which fell on his ear, must have been most disturbing to the speaker. We never thought that the plain, simple words, "pay your rent," could be so effectually used to silence a public speaker; no doubt, in this case, all the more effective on account of the truth they contained. The college students have been credited with a share in the proceedings. Truth gives us the liberty to state that we saw no student in any way connect himself with one side or the other. A good college student is ready at any time to sing with power the National Anthem.

REV. JOHN McCAUL, LL.D.

ON the afternoon of the 18th day of April last, a large concourse of the graduates and students of Toronto University and University College, together with the city council and many of Toronto's leading citizens, followed to their last resting-place in St. James' Cemetery the mortal remains of the late distinguished President of University College, the Rev. Dr. McCaul. Very many members of the teaching faculty of On-

tario marched reverently in the ranks of the mourners, recognizing in very truth that they were paying the last honours to one who was at once their personal friend and a great master and ornament of their profession. For he was indeed the greatest master of us all, one of the foremost teachers of his time. Teachers and scholars, who had been old-time fellow-students and friends, but who had not met for years, met together around the open grave of the good old doctor, and together uncovered their heads to join in the beautiful burial service of the Church of England. The Rev. Dr. Scadding, once a zealous and successful co-labourer with the deceased, officiated at the grave, and here a very pleasing and suggestive incident occurred. For just as the reverend officiant began reading St. Paul's sublime argument on the resurrection, the bright rays of the declining sun, which had been obscured by sombre clouds during the afternoon, shot through the gloom and shone full in the face of the venerable clergyman, lighting up his white hair and imparting a radiancy alike to the person and the utterances of the reader. It was a memorable scene, which few who witnessed it are likely soon to forget.

It will be worth our while to enquire into some of the conditions of success which so eminently characterized the life-work, as an instructor of youth, of the late lamented President of University College. For it does not often fall to the lot of any great teacher to possess in so remarkable a degree the faculty of controlling and influencing the studies and conduct of young men. It will be found, on a review of Dr. McCaul's career, that the foundations of his success are clearly traceable to two very important requisites in the character and acquirements of a successful teacher—self-respect and accuracy of scholar-

ship in the subjects he undertook to teach. As to the first of these qualities the poet Tennyson has well said :

' Self-reverence, self-knowledge, self-control,

These three alone lead life to sovereign power ; "

and the Emperor Marcus Aurelius, himself a very observant pupil, as any one who has read his account of his teachers will admit, in a similar vein remarks : " Reverence that which is best in the universe, and reverence likewise that which is best in yourself." Dr. McCaul on all occasions comported himself with such an easy dignity, yet with so much genuine affability towards his pupils that, that no one of them ever ventured to question his authority, much less to set it at defiance. He invariably preserved his own self-respect, and by the force of his kindly and courteous treatment of others, taught his students to respect themselves and to respect each other. This quality of self-respect always prevents its possessor from offending against that which is worthy and becoming, while furnishing ready incentives to honour that which is venerable and worshipful. And by the force of his precept and example he cultivated this noble sentiment in his pupils, and by " hallowing the common ways " of every-day life, cast their character in a finer mould. Even to the performance of minute and insignificant details he imparted a senatorial dignity, which was not suffered to degenerate into anything like pomposity, such as too often renders efforts at preserving authority ridiculous, because it is obviously assumed for the occasion. How quick is the mind of youth to detect anything of that kind which is merely " put on " as a cloak ! Dr. McCaul's quiet dignity was as much a part of his nature as his good humour, his winsome manners, and the many other estimable traits of his character.

The other element of his success as a teacher stands by no means disconnected from the first, for the reverend doctor might well claim from his classes the respect to which a thorough and exact knowledge of the subjects he undertook to teach assuredly entitled him. When a teacher is indifferently acquainted with his subject, it is difficult to maintain before his class that sense of conscious superiority which it is of the first importance he should always be able to assert. The quick wits of even the most indolent pupils will quickly find out the loose joints in the armour of the master, who is not a fully equipped hoplite of the Academe. And they will rate him accordingly. It is in vain that, after being repeatedly caught tripping, he affects a thorough knowledge of his subject. The students pierce the thin disguise, and unless he studiously make up for his deficiencies by preparation for the encounter, he will have difficulty in maintaining his own self-respect or gaining the respect of his pupils. Dr. McCaul was a most accurate as well as a most brilliant scholar. When at his best few men living in either hemisphere had a more varied or more extensive acquaintance with the Greek and Latin classics, while, as a masterly exponent of systematic logic and rhetoric, he was unsurpassed anywhere. These are the subjects he proposed to teach, and he taught them well. So well, indeed, that he may truly be said to have laid the foundation-stones of classical culture, as indeed of all academic training, in this Province. The teachers of Ontario and the alumni of the University in every walk of professional life in Canada, looking back at all that has been accomplished by him in the educational arena, will cheerfully acknowledge this. University College will always venerate his

memory as her most illustrious founder. Indeed, the good doctor, in some of his ornate convocation addresses, used to refer to himself as having rocked the cradle of the "benign mother" during the troublous times of her infancy, and gloried in seeing her grow up before his eyes, stately and fair, to lusty womanhood. Of the beloved institution with which he was so long and so successfully identified he was at all times the ornament and the boast, at once her glory and her defence—*decus et tutamen*. His best eulogy is written in the affection and esteem of his pupils everywhere.

Of Dr. McCaul's numerous classical works, the most valuable are his edition of the Satires and Epistles of Horace and his recondite researches in Greek and Roman Epigraphy. His "Britanno-Roman Inscriptions" attracted the attention of European scholars and won for him a deservedly high reputation. Trinity College, Dublin, may well cherish the memory of her illustrious son, and crown him in her fasti, as she has often crowned him before, as one of her most distinguished alumni. The teaching faculty of Ontario for generations will hold his name in honoured remembrance.

SCHOOL WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO,
EDITOR.

SOLUTIONS TO PROBLEMS IN
MAY NUMBER.

By GEO. RIDDELL, B.A., Math. Master,
Galt Coll. Inst.

57. (1) Solve $x^2 + 1 = 0$, divide by x^2 and add $2x^2 + 2 + \frac{1}{11^2} = 2$, $x + \frac{1}{11} = \pm \sqrt{2}$

$$\therefore x = \pm \frac{1 \pm \sqrt{-1}}{\sqrt{2}}$$

(2) $x^4 + 1 = d(x^4 + 4x^3 + 6x^2 + 4x + 1)$ dividing by x^2 and arranging

$$\left(x^2 + \frac{1}{x^2}\right)(1-d) - \left(x + \frac{1}{x}\right)(1+4d) - 6d = 0.$$

$$x^2 + \frac{1}{x^2} - \frac{4d}{1-d} \left(x + \frac{1}{x} - \frac{6d}{1-d}\right) = 0,$$

add and subtract 2.

$$\left(x + \frac{1}{x}\right)^2 - \frac{4d}{1-d} \left(x + \frac{1}{x} - \frac{4d+2}{1-d}\right) = 0.$$

$$x + \frac{1}{x} = \frac{2d \pm \sqrt{2(1+d)}}{1-d}, \text{ etc.}$$

58. a and β are the roots of $x^2 - px - q = 0$, either $x=a$ or $x=\beta$, then

$$x^n = \frac{a^n - \beta^n}{a - \beta} x + \frac{a^{n-1} - \beta^{n-1}}{a - \beta} q \text{ becomes}$$

$$\text{either } a^n = \frac{a^n - \beta^n}{a - \beta} a + \frac{a^{n-1} - \beta^{n-1}}{a - \beta} (-a\beta),$$

$$\text{or } \beta^n = \frac{a^n - \beta^n}{a - \beta} \beta + \frac{a^{n-1} - \beta^{n-1}}{a - \beta} (-a\beta)$$

both of which are identities, wherefore, etc.

59. The series is $1, 3, 5, 7, \dots, 2n-1$, and since $S_n = n^2$, $S_{n-1} = (n-1)^2$,

$$S_{n-1} + (n^{\text{th}} \text{ term}) = S_n,$$

$$\therefore (n-1)^2 + 2n-1 = n^2;$$

whenever $(2n-1)$ is a square number we have an integral solution of $x^2 + y^2 = z^2$, the odd square numbers are $3^2, 5^2, 7^2, \text{ etc.}$

$$\therefore 2n-1 = 9, 25, 49, \text{ etc.},$$

$$n = 5, 13, 25, \text{ etc.},$$

$$4^2 + 3^2 = 5^2, 12^2 + 5^2 = 13^2, 24^2 + 7^2 = 25^2, \text{ etc.}$$

60. Let $a = x + (p-1)d$, also $a = my^{n-1}$

$$\text{I. } b = x + (q-1)d, \text{ II. } b = my^{q-1}$$

$$c = x + (r-1)d, \quad c = my^{r-1}$$

from I. $a-b = (p-q)d$

$$b-c = (q-r)d, \therefore a^b-c, b^c-a, c^a-b =$$

$$c-a = (r-p)d, \quad a^{(q-r)d}, b^{(r-p)d}, c^{(p-q)d} =$$

from II. $m^{(2-r)l+(r-p)l+(p-q)lx}$
 $\frac{m^{(2-r)l+(r-p)l+(p-q)lx}}{m^{(2-r)l+(r-p)l+(p-q)lx}}$
 $= m^{(2-r)l+(r-p)l+(p-q)lx}$

61. In making a selection each thing may be disposed of in two ways, *i.e.*, taken or left. \therefore the 1st disposed of in 2 ways, the 2nd in 2 ways; \therefore first two in 2×2 ways, then 3rd in 2 ways, and 1st three in 2^3 ways, and so on, 1st 4 in 2^4 ways. . . . n things disposed of 2^n ways, but this includes the case when all are left. $\therefore 2^n - 1$ is total number of combinations.

62. The number of ways of writing the 26 letters in one line is $\frac{26!}{1!}$. Consider one of these arrangements: there are 25 spaces between the 26 letters, and to indicate 8 words it is necessary to place 7 points of separation in 7 of these 25 spaces, which may be done in $\frac{25!}{7!18!}$ different ways, and so or each of the $\frac{26!}{7!18!}$ arrangements. \therefore number of sentences is $\frac{25!}{7!18!} \frac{26!}{7!18!}$

63. Had the conditions been added—each man making one run at least, then the number of ways would be (as in the last example) the number of ways of placing 10 points in 79 spaces, *i.e.*, $\frac{79!}{10!69!}$; without this condition the number will be the same as if there were 11 more runs with the condition, *i.e.*, one for each man and 80 to distribute without restriction. \therefore number of ways of making the runs is $\frac{90!}{10!80!}$.

65. Take logarithms, then see Art. 679 Todhunter's Algebra, $\frac{\log a + \log b + \log c + \log d}{m + n + p + q}$ lies in value between the greatest and least of $\frac{\log a}{m}$. . . so will the quantity of which it is the log.

66. $(1-x)^{-2} = 1 + 2x + 3x^2 + \dots + nx^{n-1} + R$ then by multiplication,
 $1 = (1-2x+x^2)(1+2x+3x^2+\dots+nx^{n-1}+R)$
 $= 1 + 2x + 3x^2 + \dots + nx^{n-1} + R$
 $- 2x - 4x^2 - 6x^3 - (2x-2)x^{n-1} - 2nx^n - 2Rx$
 $+ x^2 + 2x^3 + \dots + (n-2)x^{n-1}$

$$0 = -(n+1)x^n + nx^{n+1} + x^n R,$$

$$\therefore R = \frac{(n+1-nx)x^n}{(1-x)^2}$$

(For questions see May number.)

CLASSICS.

G. H. ROBINSON, M.A., TORONTO, EDITOR.

BRADLEY'S ARNOLD.

BY M. A.

Exercise 30.

1. Potest fieri ut tu homo turpissimus non dubitaturus sis servitium dignitati anteponere.
2. Negat se illi certamini juvenem interfuisse.
3. Se amicis nunquam defuturum esse pollicetur.
4. Querenti mihi quis exercitui praesesset, nihil respondit.
5. Omnes compertum habemus quam sit turpe amicis in difficili tempore deesse.
6. Neque tempori me neque duci, neque occasioni defuturum esse spondeo; sed fortuna nescio an consiliis nostris obstat.
7. Marcellum Syracusis, pulcherrimae urbi illacrimasse dicunt.
8. Equidem vix crediderim regem nostrum, mitissimi hominem ingenii, adeo servitutum fuisse.
9. In his quae nunc civitati instant periculis, omnes in rempublicam incumbamus.
10. Ad existimationem ejus quam plurimum pertinet, compertum nos habere utrum in acie ceciderit an sibi vim intulerit.
11. Oportuit fratri tuo, viro fortissimo, obviam excedere, domi sedere tutus maluisti.
12. Velim scire utrum patriae sit et indicaturus bellum et illaturus, an utilitates suas reipublicae posthabiturus.
13. Ne alios ille ad simile scelus impelleret, rem ad magistratum invitatus detuli.
14. Nunquam ille vel potentissimum quemque adulari, vel multitudinam assentari voluit; semper sibi confidebat et omnibus se periculis objiciebat.
15. Imminet nobis quotidie fames; instant praefecto oppidani ut urbem hostibus dedat; is consilium suum mecum communicare non vult, nec quid faciam habeo.

Exercise 50.

1. Hi ad castra nostra, sui laudandi, incusandi vestri causa, venisse dicuntur; nunquam

tibi placando sibi crimine gravissimo purgandis, dant operam. 2. Res nullo modo est differenda; hoc ipso vobis die decernendum est, utrum evertendæ ea reipublicæ sit an conservandæ. 3. Adco in ipsa victoria mitem se ac dementem præbuit, ut dubitari possit utrum plus favoris inimicis ignoscendo an sublevandis amicis consecutus sit. 4. Dubitari non potest quin patriæ potius quam sibi consulendo, quin amicorum commodis sua posthabendo, et sicut animo suo ita linguæ moderando, hic juvenis maximum quemque natu facile vicerit. 5. Omnem quam templis diripiendis, singulorum bona publicando, pecunias civitatibus imperando, prædam nactus erat secreto exportandum curavit. 6. Audendo aliquid et instando, non cunctando, cessandoque, nec multa discernendo pauca faciendo, ea se quæ ad id temporis effecissent, efficisse dixit. 7. Ego insectandi hostis auctor sui, ne quod ei respirandi spatium neve ulla sui colligendi, vel cognoscendi qui et quot cum aggregerentur, facultas relinqueretur.

Exercise 51.

1. Legati ab Atheniensibus Olynthum ad Philippum injurias civibus suis factas questum venerunt. 2. Massiliam ad patrem ludos spectatum profectus est, sed his paucis diebus, dum iter facit a sicario interfectus est. 3. Vos intra castra manete ut cibum acquietem et reliqua omnia, quæ vobis sunt capiatis; nos qui pugnando minus fatigati sumus—nonne enim recentes atque integri secundum prælium (or confecto jam prælio) advenimus? frumentatum ac pubulatum exeamus. 4. Iram vestram deprecatum ac pacem flagitatum venimus; magnopere speramus ea nos quæ petimus consecuturos esse. 5. Romam ad senatum legatos misit victoriam populo Romano gratulatum. 6. Incredible dictu est, quam sæpe te quamque vehementer ne isti homini fidem haberes monuerim. 7. Haud facile dictu est utrum huic homini parcendum sit et ipse cum sociis incolumis dimittendus, an statim aut interficiendus sit aut in vincula conjiciendus.

MODERN LANGUAGES.

Editors: { H. I. STRANG, B.A., Goderich.
W. H. FRASER, B.A., Toronto.

EXERCISES IN ENGLISH.

1. Classify the phrases in the following according to their grammatical value, and give the relation of each:

(a) Within a windowed niche of that high hall

Site Brunswick's fated chieftain.

(b) Around their hearths by night
What gladsome looks of household love

Meet in the ruddy light!

(c) From that bleak tenement
He, many an evening, to his distant home

In solitude returning, saw the hills
Grow larger in the darkness.

2. Expand the following simple sentences into compound or complex:

(a) Owing to this unforeseen delay we missed the train.

(b) His resignation will necessitate another election.

(c) He was released on giving bonds for the payment of the amount.

(d) Unfortunately we had not time to examine them.

(e) He denied the possibility of such a thing.

(f) Not suspecting his intention I handed him the papers.

(g) He seemed disposed to question the correctness of the answer.

(h) Sending for the messenger he questioned him closely.

(i) In spite of numerous warnings he persisted in making another attempt.

(j) He is generally understood to be the owner of it.

(k) Their absence will cause a further delay.

(l) He acted according to the instructions given him.

3. Change the adjective clauses to adverb clauses:

(a) No man who was honest would have done such a thing.

(b) I pity you who will have to bear all the blame of it.

(c) Boys who do such things must be punished.

4. Change the voice of the verbs :

(a) No one has proved that he did it.

(b) He was duly informed of what they had done.

(c) You must not lose sight of its importance.

(d) The plan you propose was spoken of at last meeting.

(e) How it can be got rid of has not been shown by any one.

5. Rearrange the following sentence in as many ways as possible without destroying the sense, and give your opinion as to the effect of each change :

He spoke of this afterwards to my surprise with warm interest.

6. Classify and give the relation of the subordinate clauses :

(a) War's a game, which, were their subjects wise,
Kings should not play at.

(b) A time there was, ere England's griefs began,
When every rood of ground maintained its man.

(c) Thrice is he armed that hath his quarrel just ;
And he but naked, though locked up in steel,
Whose conscience with injustice is corrupted.

7. Supply the ellipses in the following :

(a) There's not a joy the world can give like that it takes away.

(b) It is much warmer to-day than yesterday.

(c) Do you remember the day we met them ?

(d) He grew very nervous while under examination.

(e) Though nearly fifty he seems as active as ever.

(f) He is never so happy as when at home.

8. Analyze the following simple sentences :

(a) Well had the boding tremblers learned to trace
The day's disasters in his morning face.

(b) From peak to peak the rattling crags
among
Leaps the live thunder.

(c) Two of the bee-hunters now plied their axes vigorously at the root of the tree to level it to the ground.

(d) From Clive's second visit to India dates the political ascendancy of the English in that country.

9. Tell what the italicized pronouns stand for :

(a) Its song resembles *that* of the thrush.

(b) He asked for some milk, but there was *none* to be had.

(c) *It* was necessary to make another choice.

(d) I thought *it* my duty to warn him of the danger.

(e) We offered to divide it equally but he would not agree to *that*.

(f) They had not heard from him for a week, *which* made them feel rather uneasy.

10. Combine each of the following groups into a single sentence :

(a) They had crossed the ditch. They had still to work their way through the garden wall. This wall was nearly four feet thick.

(b) They had agreed to meet at a certain spot. He arrived at this spot. His friend had been captured. His friend had been taken back to prison. He found out this on his arrival.

(c) The turnkey often entered the apartment. He never gave notice of his coming. The prisoner had to secrete his tools. He had also to secrete the chips and rubbish. The appearance of these would have betrayed him.

11. Change to direct narrative :

His father, on parting from him, exhorted him to behave well, adding that he hoped to live to see him a captain. To this the brave boy replied that if he did not think he should come to be an admiral he would not go at all.

12. Change to indirect narrative :

"If that be the case," replied their father, "you certainly shall not go, but make another attempt and I will leave it to

your honour. If you find that it is really dangerous you may return."

13. Give two examples each of an infinitive phrase used as

(a) the subject of a verb; (b) the object of a verb; (c) the object of a preposition; (d) in apposition with a noun or pronoun; (e) an adverbial adjunct to a verb; (f) an adverbial adjunct to an adjective; (g) an attributive adjunct to a noun.

14. Give examples illustrating all the different relations in which a noun clause may stand to the rest of a simple sentence.

15. Give two examples each of

(a) an adverb modifying a phrase;

(b) an adverb modifying a clause;

(c) *as* beginning an adjective clause.

16. Write sentences in which the following are correctly used: you and I, you and me, but what, kind of, affect, neither of the boys, more than one case, one of the hardest papers, compared to, who do you suppose, laying, intended to have.

17. Which is correct, and why?

(a) It is nearly a year since I was (have been) in Toronto.

(b) It made him feel rather queer (queerly).

(c) Who (whom) were you talking to just now?

(d) Ten dollars is (are) too much to give for it.

(e) The committee was (were) not agreed as to the best method.

(f) News has (have) been received.

CLASS-ROOM.

L. B. DAVIDSON, Head Master Public School,
Sault Ste. Marie, Editor.

ENTRANCE LITERATURE.

JULY, 1887.

DEATH OF LITTLE NELL.

[For remarks on the author, see Reader, p. 37.]

Before proceeding with the lesson, it will be found well to give an outline of the story of the "Old Curiosity Shop." An interest in the character of "Little Nell," and a love for the sweet, gentle girl, so patiently devoted

to her poor, weak grandfather, may easily be awakened in most young people; and thus we may possibly begin to show them that there is something worth caring for in works of a higher stamp than the ordinary class of novels with which, it is greatly to be feared, only too many of our pupils fill their minds.

No sleep so beautiful, etc.—Suppl. the ellipsis.

Her little bird, etc.—The contrast drawn between the weakness of the bird and the strength of the child's heart. Yet there is something strangely touching in the mention of "strength" of any kind belonging to "Little Nell." Point out how her strength of heart had been shown in her wanderings with the old man.

The old fireside.—In the "Old Curiosity Shop," before they set out upon their wanderings.

At the door of the poor school-master.—The first time they saw her friend the school-master, and sought his hospitality.

The furnace fire.—Where a kind workman brought them to sleep on their way through a large manufacturing town.

At the still bedside of the dying boy.—Little Nell had gone with the school-master to see his little dying scholar.

For warmth.—The old man has not yet understood that his little companion is dead.

Anon.—Again.

When morning came.—The friends who had been tracing the wanderers arrived at night, to find Nell dead and the grandfather not understanding it.

The child.—This child had been her friend since they came to their new home.

Moved.—Touched with emotion.

Done him good.—By giving him relief in tears.

Which must remove, etc.—Draw attention to the beautifully gentle mode of expression.

Fresh leaves and berries.—The excuse made to the grandfather.

Decrepit age, etc.—Notice how all classes are here included.

And still been old.—They were old "ten years ago."

The living dead.—Living, but lacking all the powers of life.

Whose day on earth had been as fleeting.—Nell's time on earth was gone quickly, as the newly-fallen snow quickly melts away.

Under the porch.—When they first came to the village she had sat to rest in the church porch.

The boughs of trees—the birds.—Another answer to her request, "When I die, put near me something that has loved the light, and had the sky above it always."

Earth to earth, ashes to ashes, dust to dust.
—Part of the burial service.

Bold.—Fearless. The word is not used here in the meaning of "rude," as it often is elsewhere.

Teem with.—Are full of.

NORTH HASTINGS UNIFORM PROMOTION EXAMINATIONS.

DECEMBER, 1886.

Entrance to Fourth Class.

COMPOSITION—TIME, 2½ HOURS.

Capitals, periods, question-marks and commas must be used wherever necessary. One mark to be deducted for every error in spelling.

1. Combine each of the following statements into a *simple* sentence :

(a) The boy came. The boy was pretty. He was little. He was blue-eyed. He had rosy cheeks. He was a young boy. He came to his mother. He had a rabbit. The rabbit was white. The boy carried the rabbit in his pinafore. [10.]

(b) The boy wrote a letter. He was a good boy. He wrote a long letter. He wrote to his father. He wrote from school. He wrote the letter on his birthday. He wrote it early in the morning. He wrote it early before breakfast. [10.]

2. The teacher will give each pupil a lump of putty and a piece of India rubber. Let them examine these very carefully, using their senses of sight, feeling, taste and smell, and then write several sentences describing the differences between them. [20.]

3. The teacher will read deliberately and distinctly to the pupils the story given in the special paper. The pupils are then to reproduce it in their own language in correctly formed sentences. [25.]

4. Write a letter to a friend in Florida, giving him (or her) a description of harvest in Hastings. [25.]

[Use a separate half-sheet of paper for this. Be very particular about the form of the letter. Of the 25 marks, give 4 for the introduction (address, etc.) and subscription.]

5. Change these sentences so that the subject of the verb may become the object, and the object become the subject:—I delighted him by my remarks. His kind and even temper endeared him to his pupils. I found them in the garden. No one had noticed his departure. [20.]

6 A debt of \$45, due by James Jamieson to Robert O'Hara, for groceries, is paid November 6th, 1886. Write a receipt. [8.]
Count 100 marks a full paper.

GRAMMAR—TIME, 2½ HOURS.

Deduct one mark for each error in spelling.

1. What part of speech in each of the italicized words in the following:—That "*if*" spoils the statement. Why do you *sir* me so much? 'Tis Heaven itself that points out an *hereafter*. *Hereafter*, no such conduct will be permitted. Do not *moult* your words so. He is an *only* son. [18.]

Give definite reasons in complete sentences. Two marks for each correct reason.

2. Write the past tense and past participle of *spring*, *swim*, *wring*, *swear*, *beat*; the second singular present perfect indicative (active) of *sit*, *strive*; the plural possessive of *mouse*, *sheep*, *wife*. [16.]

3. Analyze, naming the "simple subject," the "enlargements" of the subject, the "simple predicate, the object, and the adverbial modifications of the predicate:—"

(a) The *hardy* Laplander, clad in skins, *boldly defies the severity* of his northern climate. [6.]

(b) *In this* situation, the sportsman rested a few minutes. [5.]

4. Parse in full the italicized words in the above. [10.]

5. Change these declarative sentences into interrogative sentences:—Alfred the Great did much to elevate the English. Fine silks come from France. In the heat of summer a shower is refreshing to the whole vegetable creation. [6.]

6. If the phrases (3) "clad in skins," "of his northern climate," "in this situation," "a few minutes," be treated as single words, to what part of speech will each belong? Give reasons. (Two marks for each reason.) [15.]

7. Form nouns (a) nouns from *resist*, *simple*, *describe*, *deep*; (b) adjectives from *trouble*, *hero*, *speech*, *respect*; and (c) verbs from *large*, *beautiful*, *civil*. [11.]

8. Write these sentences correctly:—(a) Neither Mary nor Ellen were at home. (b) He was too scared to go any farther. (c) Don't make these kind of errors. (d) We have a daily mail every day now. (e) She paid me only a dollar. (f) He is not coming, I don't think. (g) Are you taller than she? [14.]

9. What is meant by *Number*, *Case*, *Imperative Mood*, *Transitive Verb*? [8.]
Count 100 marks a full paper.

ARITHMETIC—TIME, 3 HOURS.

Full work required.

1. If a grocer, by selling tea at 60 cents a pound, gains $\frac{1}{5}$ of the cost, what did the tea cost him per cwt.? [10.]

2. What is the least fraction which must be added to 2 and $\frac{2}{3} + \frac{1}{4} - \frac{1}{3} + \frac{1}{4}$ so as to make a whole number? [10.]

3. After paying the following bill a lady has \$1.42 left; how much had she at first? 25½ yds. cloth at \$1.23 a yd., 8¾ yds. of muslin at 45 cents a yd., 25 lbs. sugar at 11 lbs. for \$1. [15.]

4. By selling a house for \$1,800 I lost one-tenth of the cost. At what price should I have sold it to have gained one-fifteenth of the cost? [15.]

5. In 654,321 square feet how many square miles, etc.? [8.]

6. What is the least number of which each of the numbers 144, 240, 480 and 960 is a factor? [10.]

7. James Thompson owes John Howell \$118.80, to be paid in cordwood at \$2 a cord, to be piled on the four sides of a yard 60 ft. long and 28 ft. wide. If the pile be 4 ft. wide, how high must it be to pay the debt exactly? [15.]

8. (a) In what two ways may a fraction be divided by a whole number? [3.]

(b) If $\frac{1}{5}$ of an acre cost \$28.75, what should 14 acres be worth? Solve this without finding the price of a thirty-fifth of an acre. [5.]

9. How many fields, each containing 9 acres, 148 sq. rods, can be made out of 97 acres, 387 sq. yds.? [10.]

10. What is a square, a cube, a cubic yard? Answer in full sentences. [6.]

Count 100 marks a full paper.

MENTAL ARITHMETIC—TIME, 30 MINS.

Note for the teacher.—The work must be wholly mental. Neither pen nor pencil must be used for any purpose but to write the answers on this paper in the allotted spaces.

1. From 63 take 9, add 16, divide by 10, add 41, subtract 20, divide by 4, add 93, subtract 17, add 2, divide by 5, multiply by 3, subtract 8, add 27, divide by 7, subtract 10, multiply by 13. [6.]

2. What is the value in twenty-fourths of $\frac{2}{3} + \frac{1}{2} + \frac{1}{3} - \frac{2}{4}$? [8.]

3. At \$6.25 a hundred pounds, what will be the value of 24 pounds of pork? [6.]

4. James has $\frac{2}{3}$ of an apple, John has $\frac{1}{3}$ of an apple of the same size. Thomas has another apple of the same size divided into thirty equal pieces. How many of these pieces will be equal to what James and John together have? [7.]

5. If $\frac{1}{3}$ of a farm cost \$825, what should $\frac{2}{3}$ of the same farm cost? [7.]

6. In 16 miles, 956 rods, 63 feet, 36 inches, how many miles? [7.]

7. In $\frac{2}{3}$ of a pound of coffee, $\frac{1}{3}$ of a pound of starch, and 3 half-pounds of tea, how many ounces? [6.]

8. An acre of land is worth \$340; what should I pay for 80 square rods? [6.]

Count 50 marks a full paper.

GEOGRAPHY—TIME, 2½ HOURS.

Answer in sentences.

1. Name in order, beginning at the north, those of the United States which border on the Atlantic. [10.]

2. Make a sketch map of North America, showing the chief mountain ranges and twelve important rivers. Also, indicate in writing, upon the map, the regions where wheat, cotton and oranges are most abundant. [16.]

3. Make a drawing showing the division of the earth into zones, and write in the Torrid, the North Temperate, and the Frigid zones, the names of two plants and of three animals belonging to each zone. [5.]

4. Trace, in detail, the course of the St. Lawrence, the Colorado and the Mississippi. [15.]

5. From what countries does Britain get her supply of wheat? Name four. [6.]

6. What and where is Bulgaria, Afghanistan, New Zealand, Ulster, Burrard's, Temiscaming, Charleston, Etna? [12.]

7. What recent events have made the 1st, 3rd, 4th and 7th places named in 6 noted? [8.]

8. Which of the United States border on Quebec? on Manitoba? [4.]

9. Name the chief places in each of these counties:—Oxford (4), Simcoe (4). [9.]

10. In sailing from London (England) to Ceylon, through what bodies of water would a ship pass? [9.]

11. What is meant by *commerce*? Name the greatest commercial nations in the world. [6.]

12. What is being done to shorten the length of the water route from Toronto to Belleville? [5.]

Count 100 marks a full paper.

LITERATURE—TIME, 2 HOURS.

Deduct one mark for each error in spelling.

1. Express the thought of these sentences in simple language so as to bring out clearly the meaning:—He thrives in captivity. It is very tenacious or life. They deceived him by a feigned retreat. Are not flowers

generous dispensers of grateful odours? It was an extravagant style of splendour. Gradually these efforts subsided. Its blows were trebled in rapidity and violence. [21.]

2. Write the line of The Village Blacksmith from which you can learn that the blacksmith was independent. What enabled him to be independent? [5.]

3. Write the following expressions, substituting, for the phrases in italics, single words:—A case *to be pitied*, a food *that could not be changed, by the stomach, into material for nourishing the body*, a desire for wealth *that could not be satisfied*, a glance *for a moment, a look full of anxiety*, the age *in which we live*. [18.]

4. Describe the history of flax from its growth in the field to its manufacture into fine linen. Describe each step. [10.]

5. Write a full account of the event in the life of our Saviour which is referred to in the lines—

And she thought of him who stilled the wave
On the Lake of Galilee. [10.]

6. Write a stanza which teaches us that words often do what the speaker never intended they should. [5.]

7. Which of the words *remember* and *recollect* means "*recalling to mind*"? What does the other word mean? [6.]

8. What is the chief value of the fruit of a plant? Name a plant whose fruit supplies us with material for clothing. [5.]

9. Divide these words into syllables, mark the accents and silent letters and indicate the sounds of the vowels:—*Illustrated, geography, arithmetic, Niagara, fluid, glue, bayonet, recess, chestnut, progress*. [20.]

10. Write words (two for each sound) that have the hard and soft sounds of *g*, the hissing and the *z* sound of *s*, the *v* sound of *f*, and the two sounds of *th* (*th* in *this* and *th* in *thick*). Write them in the order in which the sounds have been named. [14.]

Count 100 marks a full paper.

QUESTIONS FOR WRITTEN CLASS WORK.

These questions can be asked of classes sufficiently advanced to answer them, with great profit. They should never be made the basis of percentage results. If any teacher contemplates applying them to this unholy purpose, let her abandon at once all thought of their use. They would be worse than thrown away. Their purpose is to stimulate inquiry, suggest thought and create interest. Let them be written on the board, or better, printed on slips of paper, and one given to each member of the class. Do not hurry, do not complain if all are not answered, but make them topics for instruction. Their object is not to cram for an examination, or store the mind with useful knowledge, but to excite mental activity and give food for profitable thought. It is intended not to ask a leading question. They will be continued as often as we can find room, through the remainder of the school year.

I.

HISTORY.

1. How is the existence of the Mound Builders known? Tell all you can about them.

2. Tell all you can about the discovery of America before Columbus.

3. What are the habits and general characteristics of the North American Indians? Topics, personal appearance, food, clothing, weapons, language, government, religion.

4. Tell about the early history of Columbus.

5. Describe in full all about his first voyage.

II.

1. Tell all you can about the voyages of Columbus after the first.

2. What were the circumstances connected with the last days and death of Columbus?

3. Draw a map of North America, and locate all the settlements made before 1600. State one fact concerning each.

III.

1. Write the early history of Plymouth.

2. State the facts connected with the early history of Boston.

3. In the same manner, write about New York.

4. Narrate the early history of Philadelphia.

5. Also Baltimore.

IV.

1. State all you can concerning the discovery and early history of Florida.

2. The Mississippi River.

3. California.

4. Quebec.

5. Mexico.

V.

1. Discuss the causes, facts and results of the Indian wars.

2. The French and Indian War.

3. The Revolutionary War.

4. The War of 1812.

5. The Civil War.

VI.

SCIENTIFIC KNOWLEDGE.

1. What is an animal?

2. What is a plant?

3. What is a numeral?

4. Name five animals that have bones, and five that have none.

5. Define a *skeleton*. What is blood? What kind of blood do vertebrate animals have?

VII.

1. What animals have *neither bones nor red blood*? Describe two.

2. What is an *insect*? Name three.

3. Is the spider an insect? State reason.

4. Describe an oyster. What kind of blood has it?

5. Describe a *slug* and a *snail*.

VIII.

PHYSIOLOGY.

1. Describe the senses of man. How do they compare with other animals?

2. What is blood made from? What gives it its red colour?

3. Why do we breathe? Why should we die soon if we could not breathe?

4. What effect does cooking have on meats?

5. What forces contain all the elements which form blood?

IX.

ARITHMETIC.

1. Express by Roman notation the year Columbus discovered America.

2. How many dollars and cents are there in two pounds, English money?

3. If two gross of pens cost \$4, what will one pen cost?

4. If a ten cent loaf weighs 12 oz. when flour is \$6 a barrel, what should it weigh when flour is \$7 a barrel?

5. A man planted 25 bushels of potatoes and harvested 26 bushels, what per cent. did he make? Write the reason of the method taken in solving this problem.

X.

1. A piece of land is 4 rods wide and 750 feet long, what part of an acre does it contain?

2. Each side of a triangular piece of land is 150 feet long, what part of an acre does it contain?

3. A rectangular piece of land is 250 feet long and 50 feet broad, what part of an acre does it contain?

4. Two sides of a triangular piece of land are 250 feet, the other side is 200 feet, how many square rods does it contain?

5. Give the length of the sides, in rods, of a piece of land containing 25 acres.

XI.

1. Show by illustration how a fraction can be reduced to higher terms.

2. Invent a practical problem that will require addition of mixed numbers.

3. What will three turkeys cost, each weighing $12\frac{3}{4}$ lbs., at $15\frac{1}{2}$ cents a pound?

4. What will $2\frac{1}{2}$ cwt. of coal cost, at $\$6\frac{1}{2}$ a ton?

5. If a tree 40 feet high is represented by a drawing $1\frac{1}{2}$ in., what will represent the height of a tree 45 feet high?

XII.

1. Show by illustration the difference between a composite and a prime number.

2. Show by an example what a prime factor is.

3. Make an example of your own, explaining cancellation.

4. Show by an illustration what a denominator is.

5. Why cannot 5-6 be reduced to lower terms?

XIII.

GEOGRAPHY—ELEMENTARY.

1. Name some river in North America.

2. Which way does it flow?

3. From what mountains does it get its water?

4. What kind of water is it, fresh or salt?

5. Into what does it flow?

XIV.

1. What kind of water does the Hudson mingle with at its mouth?

2. Is there any large city near it?

3. Tell something you know about that city.

4. Do you know of any other important city in North America?

5. Tell why it is important.

XV.

1. Which are the most important mountains you think about?

2. Why are they important?

3. In which direction do they extend?

4. Name some river that runs from them to the east.

5. To the west.

XVI.

1. What large body of water flows from the Rocky Mountains to the west?

2. To the east?

3. Do you know of any smaller bodies of water that are not rivers?

4. Name one.

5. Is it connected with any other body of water?

XVII.

1. Where does the water from Lake Michigan go?

2. Where then?
3. Where does it go from Lake Erie?
4. In what river does it take a great leap?
5. What is that leap called?

XVIII.

1. Where does the water go from the Niagara River?
2. From Lake Ontario?
3. From the St. Lawrence River?
4. From the Gulf of St. Lawrence?
5. From the Atlantic Ocean?

XIX.

1. Does any water in the Niagara River ever get back to Lake Michigan?
2. Tell how that happens.
3. Which is the largest river in North America?
4. Which end of the Mississippi is most likely to freeze? Why?
5. What is the reason the water runs away from that end?

XX.

1. Into what basin does the Mississippi empty its water?
2. Is it warm or cold near the Gulf of Mexico?
3. Name some fruits that grow in that part of the country.
4. Name some that grow farther north.
5. Could you go in a boat from the Mississippi to the Atlantic Ocean? Explain.

XXI.

1. Mention five things upon which climate depends.
2. Why is it that all large cities are built on rivers or bodies of water?
3. Explain the cause of rain; state where rain is most abundant, also where there is very little rain, and give your reasons for such.
4. What does the atmosphere hold? Can we see the substance which it is full of?
5. What effect has the climate of a country on its people?

—*The School Journal*, New York and Chicago.

CONTEMPORARY LITERATURE.

THE MAGAZINES.

THE *May Overland* is an attractive and interesting number.

THE *Atlantic* for June opens with a curious story entitled "A Crucial Experiment," by J. P. Quincy.

A RECENT number of the *Century Magazine* contained two profusely-illustrated papers on Egyptology, interesting to almost everybody, and especially to Bible students. The same number contains instalments of Mr. Stockton's story, "The Hundredth Man," and of the Lincoln History, as well

as War Papers. The poems are by Frances Hodgson Burnett, Thomas Nelson Page, and others. Professor Atwater's paper (the first of a series) on the "Chemistry of Foods and Nutrition," is worthy of careful reading.

THE new number of *St. Nicholas* opens with a charming frontispiece—a June picture—entitled, "A Day-Dream." Few people will fail to read with pleasure Frank Stockton's "King London," or Lieut. Putnam's West Point article, or the "Child-Princess Charlotte," by Ellen M. Hutchinson. The stories and poems are, as usual, good.

Scribner's Magazine for June is a fine

number, well illustrated, beautifully printed, and containing many pages of good reading. The Thackeray Letters alone would ensure the popularity of the present numbers. Among the stories, while there are some that we think few people will care to read, there is one by Sarah Orne Jewett which is simply delightful.

THE Chicago *Current* is now altogether a literary weekly, containing stories, articles and verse, chiefly from western authors. The pages devoted to Comment and to Books and Authors are frequently pleasant reading.

THE May *English Illustrated Magazine* opens with the first chapters of a promising new story, "Miss Falkland," by Clementina Black. Among the illustrated articles are "A Journey to Exeter," "Some London Citizens and their Monuments," and "Stray Lines from an Angler's Pocket-book"; also part of "An Unknown Country," by the author of "John Halifax, Gentleman," which everybody should read. This magazine is a welcome visitor.

REPORT OF THE COMMISSIONER OF EDUCATION. 1884-85. Government Printing Office: Washington, D.C.

GERMAN EXAMINATION PAPERS. 1s. 6d. Rivingtons: Waterloo Place, London. 1887.

EASY GERMAN STORIES. A First German Reading Book. New and Revised Edition. 2s. 6d. *Ibid.*

EASY GERMAN PASSAGES FOR UNSEEN TRANSLATION. 1s. 6d. *Ibid.*

LES MAITRES MOSAISTES par George Sand. 2s. 6d. *Ibid.*

THE STORY OF ICELAND. By Miss L. M. MacCull. 3s. 6d. *Ibid.*

EXTRACTS FROM CÆSAR. Translated into English for re-translation. Books I.-IV. 6d. *Ibid.*

LA CANNE DE JONC. Par Alfred de Vigny. 1s. 6d. *Ibid.*

OUTLINES OF LOGIC. By Hermann Lotze. Translated and Edited by Prof. Ladd, of Yale College. \$1.00. Boston: Ginn & Co.

FIRST YEAR IN LATIN. With Exercises. By George Stewart, A.M. 95c. Philadelphia: Eldredge & Bro.

SUGGESTIVE LESSONS IN LANGUAGE AND READING. By Anna B. Badlam. \$1.65. Boston: Heath & Co.

DRAWING: PERSPECTIVE AND GEOMETRICAL. By T. H. McGuirl. Toronto: William Briggs.

I. NOTES ON SCHOOL MANAGEMENT. By George Collins. 2s. 6d. London: Moffatt & Paige.

II. ROSMINI'S METHOD IN EDUCATION. Translated by Mrs. William Grey. \$1.50. Boston: D. C. Heath & Co.

III. ELEMENTS OF PEDAGOGY. By Emerson E. White, A.M., LL.D. Cincinnati: Van Antwerp, Bragg & Co.

I. A complete and useful hand-book, intended for the use of teachers in elementary schools in England. Under the heads of (1) Organization, (2) Training, (3) Instruction, much information is imparted in a clear and systematic way.

II. A good deal of interest will be felt in this work from the pen of the eminent Italian priest—a modern saint of the Church of Rome. It is distinctly psychological in its bearing. The life of the child is divided into various periods according to the development of its mind. The views enunciated are, of course, in many instances, the views of the Church of Rome. It is to be regretted that we have but a fragment of the larger work which was contemplated by the author, but not finished when his death occurred in 1855.

III. The "Elements of Pedagogy" is the work of an experienced teacher who is al-

ready well known to American teachers as the author of several text-books. This valuable treatise consists of an analysis and statement of psychical facts and processes, and of the principles of teaching deduced from these.

COWPER'S TASK. Books III. and IV.
COLERIDGE'S LIFE OF SIR ALEXANDER BALL. With Introduction, Critiques, etc. Paper, 20 cents. Toronto: The Copp, Clark Co.

A convenient edition of the Literature for 1887-8 for High Schools. The typography, etc., is excellent.

THE ECLECTIC GUIDE TO HEALTH. Cincinnati: Van Antwerp, Bragg & Co.

This text-book on Physiology and Hygiene contains the information usually found in elementary text-books on these subjects; special reference being frequently made to the effects of alcoholic and narcotic poisons. It was prepared, indeed, to meet the de-

THE leading foreign medical journal says that "Water should be drunk cool, but not iced, with the juice of a quarter or half a lemon in it. Mineral water should also be drunk with a dash of lemon. Water should always be swallowed slowly. It is not the stomach which is dry, but the mouth and throat. If you toss off a drink of water, you throw it through your mouth into your stomach without doing the former any good, while you injure the latter by loading it with what it does not require. Drink slowly, and keep the water in your mouth for a moment when you begin. If you work in a hot room in hot weather, tie a damp cloth around your temples, and you will not experience half the cravings for drink you otherwise would."

ACCURACY, RAPIDITY, NEATNESS.— These three words, in their order, make the conditions of a written problem. Accuracy is the first condition and desideratum, rapid-

ity the second, and neatness the third. Too many teachers sacrifice everything to accuracy, claiming that to be the sole object of performing the problem; forgetting, possibly, that rapidity and neatness are as much necessary means to that end as is a knowledge of the principle involved in the problem.

A good plan—good, because we have tried it and found it to be good—is to have the pupils write at the top of their slates or papers, in large letters, these three words, and insist that the words shall meet the eye and dwell in the mind during the operation of a problem in arithmetic. If need be, the words may be written when each new problem is begun, the repetition of them serving to fix their meaning in the pupil's mind.

When the problems are performed, the slates or papers may be exchanged, the best ones under the condition noted and shown to the class for emulation, copy and improvement,

THE ELEMENTS OF PHYSICS. By A. P. Gage. Boston: Ginn & Co.

Intended to be used as a guide and assistant to laboratory practice in Physics. The present volume, which contains some four hundred pages, and is fully illustrated, will be found valuable, both as a book of reference and as a text-book.

DEDUCTIONS FROM EUCLID. London: Moffatt & Paige.

There are here some six hundred exercises on the first six books of Euclid, fully worked out and explained. Many examiners and teachers of mathematics will no doubt be able to make good use of such a convenient collection.

BUSINESS.

If you know your subscription to have expired, renew it at once. \$1 per annum is the subscription price, and there is not a teacher in Canada who cannot afford to pay that sum for a good educational paper.

Notify **THE MONTHLY** at once of change of post office, always giving the name of old office as well as the new.

THE MONTHLY will not be discontinued to responsible subscribers until ordered to be stopped. Bills will be rendered from time to time, and prompt payment of the same will be expected.

Subscribers wishing to introduce **THE MONTHLY** to their friends can have specimen copies sent free from this office to any address.

Our readers will observe that special attention is given to examination papers in this Magazine; in many cases hints and answers are given, and for several papers solutions have been furnished to all the questions. We hope subscribers and others will show in a practical way their intelligent appreciation of the valuable work done by the editors of the different departments of **THE MONTHLY**.

We are grateful to the kind friends of **THE MONTHLY** who have, from many different places, sent us letters of approval and appreciation. If golden words were current

coin, our esteemed treasurer would be able to declare a handsome dividend, and while we are much encouraged by the frequent assurances that **THE MONTHLY** is fulfilling a noble mission, we would respectfully ask our good friends to forward their subscriptions, as, though one dollar is a small amount, yet when a large number are delinquent in this small sum at one time, the effect is somewhat hurtful to the position of an educational journal, depending chiefly, as **THE MONTHLY** does, upon the support of the profession.

The best educational journal is the teacher's best friend, and we ask you, gentle reader, to aid in securing new subscribers for this educational journal, and to help the editors in getting original contributions for its columns, thus making it more and more the best.

Bound copies of this Magazine in cloth may be had from Williamson & Co. or from James Bain & Son, King Street, Toronto, for \$1.50 per copy.

The season for athletic sports is beginning. We invite the attention of our readers to the splendid line of sporting goods to be found at Mr. S. B. Windrum's, 31 King Street East (see advertisement).

TEACHERS OF GEOGRAPHY

will find the **PROGRESSIVE OUTLINE MAPS** an invaluable aid in teaching this subject. These **OUTLINES** keep a correct form of the country under consideration constantly before the pupil, and are especially helpful in assisting the mind to acquire and to fix geographical facts quickly and accurately.

As a system of Map-drawing the **PROGRESSIVE OUTLINE MAPS** are unequalled; they are highly commended by many of the best teachers. Send for samples, testimonials, and directions for use.