

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

711
F 45

11 11 11 11 11 11 11 11 11 11

Educational Weekly

Vol. IV.

THURSDAY, AUGUST 12TH, 1886.

Number 82.

The Educational Weekly

Edited by T. ARNOLD HAULTAIN, M.A.

TERMS: Two Dollars per annum Clubs of three, \$5.00. Clubs of five at \$1.60 each, or the five for \$8.00. Clubs of twenty at \$1.50 each, or the twenty for \$30.00.

New subscriptions may begin at any time during the year.

Payment, when sent by mail, should be made by post-office order or registered letter. Money sent in unregistered letters will be at the risk of the senders.

The date at the right of the name on the address label shows to what date the subscription is paid. The charge of this date to a later one is a receipt for renouance.

Subscribers desiring their papers to be discontinued are requested to give the publishers timely notification.

In ordering a change of address, or the discontinuance of the paper, the name of the post-office to which the paper is sent should always be given.

Rates of advertising will be sent on application.

Business communications and communications intended for the Editor should be on separate papers.

Note.—Attention is directed to the fifth of the above paragraphs: that timely notification is requested from those desiring the discontinuance of the paper. Subscribers are reminded that publishers are permitted by law to charge till all arrears are cleared off.

PUBLISHED BY

THE GRIP PRINTING AND PUBLISHING CO.,
TORONTO, CANADA.

JAMES V. WRIGHT, General Manager.

TORONTO, AUGUST 12, 1886.

"THERE are few," says the *London Advertiser*, "who would deny that it would be beneficial to both public and high schools to raise the standard of entrance to the latter, but it should be done gradually. Perhaps this examination has accomplished it all at once."

We fail to see any valid arguments on behalf of phonetic spelling in the letter from Mr. Houston, which we publish in this issue. Neither do we think he has in any way replied successfully to the arguments adduced in our issue of the 15th ult. A reformed spelling is not, we imagine, one of the vital or all-absorbing questions of the day. There are many problems in educational matters still unsolved—problems which merit all the attention that can possibly be given to them. Reformed spelling, we think, can easily wait its

turn. As it is, it is not agitating very perceptibly the minds of educators the world over. At present it seems to be the recreation ground of a few literary athletes.

THE *Orillia Packet* boldly says: "The result of the Entrance Examinations throughout the Province is disappointing to the friends of education. What is the use of maintaining high schools and preventing ninety per cent. of those who might profit by the advantages offered from entering them. Everybody says something must be done. The *Packet's* suggestion is that the Public School teachers be allowed to send up such pupils as they deem fitted for entering the High School, and let the head masters admit those they find sufficiently advanced for the work. No public school teacher will run unreasonable risk of having his candidates rejected, while the head master would not unduly extend the work of his school. At least, this would prevent much of the unjust deprivations which the children of parents whose means are limited suffer under the present system."

THE *Presbyterian Review*, referring to the recent action of the Senate of the University of Toronto make oriental languages a department of the curriculum, says:—"In our opinion the importance of this new departure in undergraduate studies in the Provincial University can hardly be over-estimated. The step will no doubt provoke criticism. But intelligent and disinterested criticism is at all times wholesome, and in this case will, we doubt not, be especially welcome to the promoters of the new scheme, since we are persuaded that the more steadily and keenly the enterprise is looked at, the more it will commend itself to the favour and support of all friends of liberal education. . . . To the well-trained student of our secular colleges, or even of our High schools, the first pre-requisite for such a study [historical, linguistic, and literary] of the New Testament, is within easy reach through his acquisition of the elements of Greek, but an equal familiarity

with Hebrew has never been shown by the candidates for entrance into any theological hall. No one is so bold as to maintain that while a knowledge of Greek is necessary for the competent teaching of the New Testament, a knowledge of Hebrew may very well be dispensed with by a professional student of the Old; and yet the Church has acquiesced in a neglect of the study of Hebrew among ministers and students in a way which must be styled both recreant and disgraceful. The Hebrew illiteracy which has been tolerated in the seminaries and by the examining boards of the whole Church in America should be put an end to, and we at least may thank the enlightened and liberal Senate of Toronto University and Council of University College for the course of study which gives the many graduates who are also candidates for the ministry, an ample training in the Hebrew language and literature, and also an introduction to those other languages and literatures which best illustrate the idiom and diction of the Old Testament.

But the significance of the new course of studies is not by any means limited by their importance for this professional training. The enterprise is also eminently wise and timely as a recognition of the fact that the study of Hebrew and the related languages is an important means of liberal culture. There is, perhaps, nothing that so favourably distinguishes the true higher education of this age as its practical insight into the best moral and spiritual development. The study of languages, for example, is appreciated most highly because it is the only efficient means of getting directly at the literature they embody; in other words, of appropriating the thoughts and ruling ideas of other peoples and other times. This is, for instance, the reason why the study of Greek can never be excluded from the universities, and ought not to be excluded from the high schools. But if the literature of ancient Greece has enriched the world with great and moving thoughts, that of ancient Palestine has made even a nobler and more precious contribution to the enlightenment and bettering of the race."

Contemporary Thought.

The Brooklyn Magazine, for June, considers the décolleté gown and how and why it grows—lower. It says it is pre-eminently and distinctively a ceremonial garment; that it was established as such by Francis I. of France, and that its present importance is due to the fact that it is one of the conditions of admission to the Queen's drawing room, "being to English society what the Book of Common Prayer is to the Established Church," a suggestion which that Church will scarcely relish, by the way.

LABOUR-REFORM agitators spend much breath and ink in trying to convince workmen that fortunes are generally obtained through fraud, chicanery, or "sharp practices." That some fortunes have been obtained in this way is altogether likely. A much larger number, however, have been obtained by taking great risks, by appreciating the value of inventions and discoveries that most persons decided were not worth anything, by accident, or by the exercise of superior ability in conducting old lines of business.—Chicago Times.

M. REMENYI, the celebrated violinist, has been travelling in India, playing the part of a political observer as well as musician, and he sums up his deductions from what he has seen as follows in the Madras Mail: "Englishmen ought to be more proud of having been able to govern India's vast population than anything else. No other nation on earth could have undertaken such a great task with such glorious results. Don't misunderstand me. I do not mean to say that England's rule in India is perfection—far from it; but it is the best possible under the millions of difficulties which must have obstructed the path of the English; and I repeat it again and with emphasis, that Englishmen ought to congratulate themselves on the happy results of their government of glorious, grand old India, for, through her colonizing genius, England has done more good to humanity than thousands of visionary utopists and politicians."

DR. PROSPER BENDER discusses "The Overcrowding of Cities" in the Magazine of American History. He holds that a regard for the welfare of the people dictates a reasonable discouragement of the influx to the cities. He says that not only do our agriculturalists raise considerable less produce than they might, but that they also pay more than their help is worth. "Promising openings," he says, "for ventures in agriculture will continue to be seized by city men and immigrants of moral tastes, who, though often at the cost of a tedious apprenticeship and considerable outlay, will ultimately make successful husbandmen as well as influential members of society. A proportion, moreover, of the young farmers who have passed the wild oat stage in town, the least profitable of all agricultural experiences, and who have given up the hope of obtaining, early, colossal fortunes, will always be found returning to the old or some adjoining township sadder as well as wiser men."—The Current.

"As readers of their own poems," says the Boston Literary World, "Holmes and Lowell

singularly illustrate the fact that the poet is the man. Lowell's poetry, certainly his statelier and preferred verse, is a marble statue, miraculously touched with life; Holmes' is the effervescing draught which bubbles and sparkles and overflows. As readers, Lowell is corresponding^{ly} calm, dignified, and unimpassioned, almost cold; or if fervent, fervent with a hidden heat; while Holmes is animated and magnetic, creating an instantaneous sympathy with his hearers, and without the slightest pretence of elocutionary art, really investing his delivery with irresistible pathos and touches of a true dramatic fire. Dr. Holmes holds a high place in the rank of American poets, and in our opinion his place will rise as the years go on. But his personal interpretation of his poems amounts to an actual illumination of them. No one has penetrated to the real heart of his verse who has not been guided thereto under the undeniable spell of his own sympathetic voice, his own kindling eye, and his own winning way. If it were sixty-seven with him, and not seventy-seven, we should be strongly tempted to say that he owed it to the two generations whom he has charmed with his pen, to go upon the platform for a time and make a business, as Dickens did, of being his own reader. How grateful should we all feel to have him say that it was not too late now."

Le Paris-Canada, the paper published by Mr. Hector Fabre in Paris in the interests of the Canadian government, has some curious statistics relative to the the rapid increase of the French population in this country. The thirteen English electoral divisions are now nearly all French, it says. The statistics of 1884 give the following results:

	French.	English.
Megantic	13,500	5,650
Drummond & Arthabaska	35,000	5,000
Richmond and Wolfe	17,000	10,000
Sherbrooke	7,200	6,900
Shefford	18,500	5,800
Missisquoi	1,450	7,550
Ottawa	35,000	16,500

In these seven counties, in which the French population have risen to a majority, the English population has remained stationary, or has even decreased. In Compton, where the population is now 10,000 French and 12,000 English, we may calculate upon a French majority at the next census. There will then remain only five counties in which English preponderance will be assured for a few years longer.

	French.	English.
Stanstead	5,500	11,400
Brome	5,600	9,500
Huntingdon	5,450	10,000
Argenteuil	7,750	10,000
Pontiac	5,750	15,500

The increase of the French race in the English counties is enormous, it adds. In ten years it has been ninety per cent. in Compton, fifty per cent. in Brome, sixty-six per cent. in Argenteuil, fifty per cent. in Pontiac, and only in Huntingdon have the two races remained stationary.

THE move of the French Chambers against the priests and nuns is interesting, both as persecution and a matter for philosophical debate. The priests and nuns, under the present system, are allowed to teach in public schools, and all people drawing money from the Government must send their children to these schools. The new law is supported

entirely by atheists, who believe the human demand for religion to be a superstition, and only the effect of human teaching. The idea of such men as Gambetta and Paul Bert was and is to emancipate the French from "the thraldom of religion." It is but fair to suppose these men are honest in their feelings. But at the same time it is also only fair to say that in America Nature has taught to her children a vastly different lesson. If we judge such a city as Paris by its works—"by their works ye shall know them"—we shall be horrified by the epicureanism, selfishness, sordid love of life, and superficiality which are impressed upon us. These are, then, the results of atheism. In America we behold a different state of the human mind. Is there a persistence here of the Asian and Athenian idea of a pantheistic state? Is there a religion in the air we breathe, and is there none in the Parisian air? For here the wisest men we have, hear within their hearts the still small voice. These men pray for strength and are stronger. They pray for humility and they are more beloved among men, who thereafter heap greater honours upon them. Perhaps each nation has its self-love, but it seems to us, Americans, that the moral air is better here than in Paris. And if that be so, is it not because we have less of M. Paul Bert's exalted knowledge which is called atheism? We shall make war on the Church and make it with wisdom only after we have begun to envy the moral poise of the average French leader of thought, his amiability, his mercy, and his charity.—The Current.

No more convincing or more valuable proof of the ground which Oriental studies is gaining in this country has been afforded in this generation than the appearance of the Rev. Dr. Hughes's "Dictionary of Islam." It would be no exaggeration of language to describe this monumental record of a lifetime of scholarship and research as a really magnificent contribution to our knowledge of the belief, thoughts, and manners of the East. Englishmen sometimes seem to ignore the fact, which Lord Beaconsfield never allowed himself to forget, that England is an Asiatic as well as a European Empire, and that the sovereign of this country rules over the Mussulman as well as the Christian, over the "True Believer" as well as the Frank. To us, therefore, far more than to any other European Power, the importance of a familiarity with the creeds and customs of the East ought ever to be present. France is the only other Continental State which can boast of Mussulman dependencies, and the influence and interest of France in the East is far inferior to our own. Yet how much more France has done to advance Oriental knowledge and to familiarize her countrymen with Oriental languages and literatures! Germany, with practically no personal interest in Eastern lands and peoples, has long stood distinctly at the head of Oriental scholarship. For some years back, however, England has been making quick strides along this peculiar path of knowledge. The devotion to Orientalism which Goethe anticipated, and which Emerson predicted, has already manifested itself, and English scholars are rapidly asserting the right of England to a foremost place in Oriental scholarship as well as in Oriental influence. Mr. Hughes's "Dictionary of Islam" is one of the finest fruits of this awakening scholarship.—J. H. McCarthy, in The Whitehall Review.

Notes and Comments.

WE recommend for the perusal of our readers the careful and elaborate article (the eighth of the series) on "Systematic Pronunciation" by Mr. M. L. Rouse, which appears in another part of this issue.

WE give in another column an interesting list of words for pronunciation which we have received through the kindness of Mr. Thomas O'Hagan, who tells us that they were recently given at a large meeting in Chautauqua as tests in pronunciation.

BEFORE separating the members of Mr. Spotton's botany class presented that gentleman with a complimentary resolution thanking him for his efforts in their behalf, and for his patience and urbanity at all times. They also presented him with a photograph of the class.

THE poem which heads our "Literature and Science" columns is from the pen of Mr. Charles P. O'Connor. Mr. O'Connor has published not a few books of poems, and has obtained recognition from many literary men in England. He has also been placed upon the English civil list.

PRESIDENT ELLIOT asserts that the American people have less interest relatively in the cultivation of the love for beauty, goodness, and truth, and of the sense of duty and honour, than they had a century ago, and that they are more absorbed in creature comforts and material well being.—*The Academy News*.

THE Aryan Theosophical Society, of New York, has begun the publication of a magazine under the editorship of W. Q. Judge, called *The Path*, devoted to the brotherhood of humanity, theosophy in America, and the study of occult science, philosophy and Aryan literature. For an account of Theosophy and its tricks we refer our readers to the Proceedings of the Society for Psychological Research.

SUPR. E. S. Cox, of Portsmouth, remarks that examinations tend to limit the broadening processes of the mind, and may tend to a mechanical style of teaching. The memory is too often relied upon. The liberal and right use of examinations is of high educational value, both as a criterion for promotion and as a means of showing the teacher what should be done for the pupils. Cramping for examinations does not give the pupil solid abiding knowledge.

IN "Brain Rest" Prof. J. L. Corning gives six rules whereby mental bankruptcy may be avoided. Avoid, first, excessive indulgence of the emotions; second, frantic, desultory efforts to accomplish in one hour an amount of mental work appropriate to

double that amount of time; third, avoid every species of excess which experience has proven leads to general constitutional drain; fourth, avoid attempting to do two things at one and the same time; avoid petty social and other engagements which interfere with the function of sleep; sixth, avoid indigestible food.—*Ex*.

REGARDING Sanford Fleming's visit to England, his published scheme (and the Imperial authorities have promised to support the idea) is to lay a cable from Vancouver, B. C., to the Aleutian or Sandwich Islands in the Pacific, thence to Yeddo, Japan, thence to Hong Kong, and from there to Australia and New Zealand. The only question now to be decided seems to be which is the more practical route, via the Aleutian or Sandwich Islands. It is an understood fact that a cable will be laid and connected with the Canadian Pacific telegraph system. Engineers have been sent from here to survey the great north route from St. Jerome to Notre Dame De Desert on the Gatineau River, a distance of about 150 miles.

SOME teachers know how to deal with boys. The members of a certain high school, after a long debate, decided that the marking system was injurious and unfair, and petitioned the principal to abolish it. "We know," said the spokesman, "whether we have prepared our lessons or not; the record of an accidental miss may be quite misleading." There was a grand baseball match impending in which the whole school was intensely interested. "Let us try it on the ball ground first," said the teacher. "In the coming match keep no score. You will know whether you play well or ill, and, as for errors, they are often pure accident; why record them?" The boys smiled and withdrew. The reasoning was too much for them.—*New York Ledger*.

AT the close of the examination of the papers of the second and third class teachers which has been going on for the last three weeks, the following resolution was most enthusiastically carried: "That the Committee of Sub-examiners for second and third class teachers' certificates hereby expressed the satisfaction we feel with the courteous and business-like way our labours have been directed by Mr. J. J. Tilley. His skill in assigning subjects and his close attention to the even progress of the work in each department have done much to lessen our labours and make them more agreeable. We all feel that the tedious monotony connected with the discharge of our duties has been much relieved by his ready explanations and unvarying kindness."

IF the prodigious growth of the French-Canadian population has excited the surprise of economists, not less remarkable, says

Paris-Canada, is the longevity of that nationality. Among the veterans of the war of 1812 and 1813, waged so gloriously by the Canadian people against the United States, there are still surviving 62 of the age 90; 31 aged 91; 36 aged 92; 17 aged 93; 5 aged 94; 15 aged 95; 5 aged 96; 6 aged 97; 8 aged 98; 4 aged 99; 2 aged 100; 1 aged 101. Since 1881 the number of those veterans has been reduced from 1,259 to 328. These figures taken from the official report of Sir A. P. Caron, Minister of Militia, as well as an examination of the parochial register, prove that if it is easy to be born on the banks of the St. Lawrence, it takes a long time to die there—thanks to uninterrupted peace, a happy life and healthy climate.

A POST-CARD addressed as follows:

MR. WILLIAM HOUSTON,

Writer of the Article "English Spelling" in the EDUCATIONAL WEEKLY, of 6th May.

Care of the Editor EDUCATIONAL WEEKLY, has been received from Mr. Eizak Pitman, Phonetic Institute, Bath, England. We have Mr. Houston's permission to reproduce it. It runs as follows:

"Allow me to thank you for your artikel on Spelling Reform in the EDUCATIONAL WEEKLY for 6th May, which I hav had set for the *Fonetik Journal*.

"I send, by Parsel Post, a few trakts and a littel book. Az the book woz printed 8 yearz ago, it does not reprezent the Fonetik alfabet ov the prezent day, nor our prezent mode ov furthering the Reform.

"I shud be pleazd to reseve (I shal adopt this insted ov resiev) a kommunikation from you for the *Fonetik Journal*."

THE *New York Church Union* says that a co-operative society of more than ordinary merit and success has been in existence for two years on the Pacific coast. It is the San Francisco Girls' Union organized in June 1884, with a membership which now numbers 400. The membership is of two classes, sustaining and beneficiary, the dues for both being \$3.00 a year. The latter are entitled to a home while out of employment, for a moderate sum and to assistance in fitting themselves for work and in finding work; and the former are alone entitled to the privilege of obtaining trained help from the Union. This is no small thing when it is known that there is a training school attached, and that no girls are sent out until thoroughly competent in their special department. The school includes skilled nursing, domestic service, and sewing. During the last year and a half 324 girls have been trained and placed in good positions. This hint of the many valuable features of this enterprise will, it is hoped, commend it to our philanthropic women everywhere; for this is the solution of many problems.

Literature and Science.

STILL SINGING.

I sit and sing as the years go on !
My songs fling out to the great glad sun,
Asking a place for new suns to scan,
Singing all day for man.

Singing my songs 'mid the whirl of life,
Are they with soul of poesy rife ?
Have they for man's better knowledge trod
Up near the throne of God !

Wreathing themselves with Eden's flowers,
Have they the gift of heavenly hours ?
Say will the birds of my tuneful brain
Give man new life again ?

I only know they're of me a part.
Strings of soul touched with blood of heart.
The yearnings wild to do good—and see
Man from all thrall made free.

For better life both here and heaven,
The songs I sing, e'er sought to leaven
Mankind with. Ever seeking from grave,
Of life, mankind, to save.

I sing to beauty, the years that roll,
Women and picture and song, my soul,
Thrones on an altar for wan to pray—
What less I do, but say :—

I strike my lyre as the years go on ;
My songs fling out to the great glad sun ;
Asking a place for new suns to scan,
Singing all day for man.

CHARLES P. O'CONNOR.

NATURAL SLEEP.

THE restoration of energy, which sleep alone can afford, is necessary for the maintenance of nervous vigour ; and whereas the muscular system if overtaxed at last refuses to work, the brain under similar circumstances too frequently refuses to rest. The sufferer, instead of trying to remove or lessen the cause of his sleeplessness, comforts himself with the hope that it will soon disappear, or else has recourse to alcohol, morphia, the bromides, chloral, etc. Valuable and necessary as these remedies often are (I refer especially to the drugs), there can be no question as to the mischief which attends their frequent use ; and there is much reason to fear that their employment in the absence of any medical authority is largely on the increase. Many of the "proprietary articles" sold by druggists, and in great demand at the present day, owe their efficacy to one or more of these powerful drugs. Not a few deaths have been caused by their use, and in a still larger number of cases they have helped to produce a fatal result. Sleeplessness is always accompanied by indigestion in some one or other of its protean forms, and the two conditions react upon and aggravate each other. If rest cannot be obtained, and if the vital machine cannot be supplied with a due amount of fuel, and, moreover, fails to utilize that which is supplied, mental and bodily collapse cannot be far distant. The details of the downward process vary, but the result is much the same in all cases. Sleeplessness and loss of appetite are fol-

lowed by loss of flesh and strength, nervous irritability alternating with depression, palpitation and other derangements of the heart, especially at night, and many of those symptoms grouped together under the old term "hypochondriasis." When this stage has been reached, "the borderlands of insanity" are within measurable distance, even if they had not already been reached.
—*Ex.*

THE ANTIQUITY OF CELTIC.

MR. MICHAEL C. O'SHEA, who was recently elected president of the Philo-Celtic society of Boston, made an elaborate argument to his inaugural address to prove that the Celtic language contained the roots of the ancient language. He said :—

The relationship of Irish to Sanskrit is faintly and, to all seeming, grudgingly acknowledged, but only as a relation of subordination, for it has been said that Sanskrit contains the roots of Celtic, whereas, on the contrary, the Celtic contains the roots of Sanskrit, and is plainly a more ancient and far less corrupt dialect of Aryan speech than Sanskrit is. The arsenal and magazine stored up in the Irish language consists of the primary roots of Sanskrit, Greek, Latin, Gothic, and of course of their numerous ramifications. These roots which the Celtic possesses are real roots, not the silly meaningless combinations of consonants given by reputed philologists as roots, but monosyllabic, significant words which carry their significations through the compounds formed from them, compounds that are found in slightly different forms in Sanskrit, Greek, Latin, Gothic, etc. Hundreds of instances can be given. But two words are sufficient to show that those so called royal heads of language are not deserving of that title, but that the ancient Scytho-Chaldaic, commonly called Celtic, is the only language worthy of the title. Philologists are blindly groping for this primitive speech, while it lies under their feet beneath the ban of hostile Saxon and pro-Saxon writers who seem determined to overwhelm and drown the ancient mother language in a flood of ink, envenomed by the deadly ingredients of malignant slander, vilifying ridicule and outrageous falsehood.

These two words we give in illustration are found in Sanskrit, Greek, Latin, Irish, and even English, but the Celtic alone can give the primary roots, Sanskrit, "Kama" to love, and "Yama" twins, Latin "Amo" I love, and Greek "Amaxa" a wagon, Irish "Amansachth," love, and "Ama," in general a yoke or bond or burthen imposed, but in particular "Amoi" ; a plural like scissors, means the collar braces of horse harness, to which the traces are attached, which mainly connect the wagon with the horse, from the Celtic they got the English name, "haims." The main primary root of all these Sanskrit,

Greek, Latin, Irish and English words is evidently the Irish numeral adjective "Da," pron' "Dhaw," the mere numeral is "Do," pronounced "Dho," precisely like English "though" ; but when it becomes a numeral adjective qualifying a noun, it is "Da," pronounced "Dha," as "dha bhean," two women, pronounced "dha van." The initial "D" of Irish "Da," is in phonetic value "Db," and is changeable in sound to that of "Y" ; hence Sanskrit "Yama," twins a two-ling, a pair, a couple. This sense of the union of one is evidently the radical idea, which runs through the Sanskrit "Kama" (which in Celtic would be "Co-ama," equal or mutual bond), and "Sans Yama," twins ; also the Greek "Amaxa," a wagon or team, a union of horse and chariot, or car, the Latin "Amo," and Irish "Amansachthe," love, union of hearts, the Irish "Amo," and English "haims," braces, bonds, which with their attachments, the traces, connect horse and wagon. Thus we find the primary root of all only in Irish. No Saxon or pre-Saxon can deny this ; he will not try to reason or argue, he will only give the usual Celtophobic sneer or scoff, and will still continue in his blind prejudice and bitter hostility.

PICTURES OF THE HORSE IN ACTION.

WE have shown some of the uses of photography in horsemanship, but it would be difficult to indicate what the limits of such uses may be in the future. As we have suggested, the defective action of a horse can be readily detected in a photograph, and perhaps the day may come when the dealer will be required to furnish a picture of the animal he offers for sale, as he would now give a "warranty." The fox-hunter, compelled through age and honourable wounds to give up his favourite sport, may console himself by gazing upon the portrait of himself and his horse as they were caught by the camera in the act of clearing the park-palings that bounded the field. To the rider and to the trainer the photographs of the horse in motion must prove of great value, and many things in the art of horsemanship which heretofore could have been arrived at only after long-continued tentative experiments will easily be made clear through the aid of the photographer. These pictures of the horse in action can be taken without difficulty at no great cost. An ordinary apparatus, with a lens of fairly good quality, and a shutter that is acted upon by a strong elastic band or a steel spring, will suffice. The sole secret in the operation is to have the horse as far away from the camera as is consistent with a clear view of the animal, so that in accordance with perspective laws the effect of motion on the plate is diminished.—*The Saturday Review.*

Special Papers.

SYSTEMATIC PRONUNCIATION.

VIII.

SECONDLY, there is a curious analogy between *a* and *o* affecting this matter. Just as *a* before a consonant not followed by silent *e* has nearly always the sound heard in *fat*, so has *o* in the same situation nearly always the one heard in *not* or *don*. But before *th* sharp *a* prefers the long Italian sound; and before the same consonant *o* takes either its true long sound or more commonly that of *o* in *nor* or *aw* in *dawn*. Thus we pronounce *bath*, *lath*, *math*, *path*, *father*, and *rather* as *bäth*, *läth*, *mäth*, *fäther*, and *räther*, (*hath* and *swath* being uttered exceptionally *hüth* and *swäth*); and so we pronounce *broth*, *cloth*, *froth*, *moth*, and *wroth* as *bräuth*, *kläuth*, *fräuth*, *mäuth*, and *rawth*. If, then, we find *o* before any of the consonantal combinations in question undergoing a like change and *a* made by a multitude of Englishmen to change analogically, we should hold those many countrymen of ours to be correct.

Now our short sound of *o* tends to change into that of *aw* before the simple *f* sound; since *coffee* and *toffee* are commonly pronounced by the uneducated of southern England and frequently by the educated *kawfy* and *lawfy*, while though *off* as a prefix (in *offspring*, *offscouring* and the like) is usually called *öf*, as a simple word, most educated Englishmen pronounce it *awf*, while they pronounce *cough*, *kawf*; and there are only ten other underived words that contain the combination (one of which, *trough*, is often lengthened).

Two partial analogies, therefore, help to justify the wide-spread English practice of giving to *a* before the four *s* as in *chaff*, *graff*, *quaff*, and *staff* its long Italian value. Before the pair of consonants *st*, again in three cases our *o* has the sound of *aw*; for while the educated call *craft* *kräft* the great majority of them call the remaining words of this form, namely *loft*, *oft*, and *soft*, *lawft*, *awft*, and *sawft*, giving the same kind of pronunciation to their derivatives *aloft*, *loft*, *often*, and *soften*.

Here, then, two strong analogies confirm the practice of the Southumbrians. We can only find accented *o* before *sp* in *prosper* and one of its cognate words, *hospital* and two of its cognates, and *osprey*, and before the sound of *sê* in *mosque*; and the short utterance of these few classical or modern and foreign terms will not conversely neutralize the argument from regularity already given—the less so, indeed, as the uneducated of England constantly prolong the sound of *hospital* and we think also of *prosper*, calling them *hawspital* and *prawsper*.

Besides the two words we have struck out (*lass* and *mass*), *a* precedes the simple sound of *s* in no monosyllables but *gas*, *bass* (the wood) and *bass* and *wrasse* (the kinds of fish), the third of which seems to be usual, called *bîs*, so that seven monosyllables are pronounced long by the majority of Englishmen against four that are pronounced short: but, on the other hand, *a* occurs accented in very many polysyllables with the short sound, and we have only two polysyllables in our list—*alas* and *surpass*—wherein the *a* is commonly sounded Italianwise. Much the same may be said of the occurrence of *a* before *st*; though we have a greater preponderance of custom here in favour of the Italian sound: seven monosyllables in our list oppose two outside it, *bust* and *hast* (the latter of which also was doubtless pronounced *hîst* when its companion *hath* was colloquial); while eleven polysyllables within make a good show against about double their number without (just twenty-four including the words that we have eliminated, of which seven receive the Italian sound in many lips). Except in blendings with the prefixes *con* and *non* we can find *o* coming before the sound of *ns* only in *nonce*, *tonsil*, and *response* and before the sound of *nsh* only in *tonsure*; but on behalf of the analogy we find *an* occurring both spelt and uttered in *haunch*, *paunch*, and *staunch*, the adjective (unless we read the older sound of *ä* in those words, which will show this sound to be still more favoured before *nsh*).

Out of nine monosyllables ending in *oss*, the two most commonly used ones—*loss* and *cross* (in its two senses) have their *o* sounded as *aw*; while the utterance of *across* follows its parent word, and though when accented in other polysyllables *o* has its common short sound, the total number of these is very small.

Out of ten monosyllables in *ost*, again only two past participles—*lossed* and *glossed*—have the common short sound of *o*, three words in all—*cost* and *frost* besides the participle *lost*—having the sound of *aw*, one—*dost*—the sound of the *u* in *but*, and the remaining four—*ghost*, *host*, *most*, and *post*—that of long *o*, *costly* follows *cost*; while *postal*, *postern*, and all compounds with the prefix *post* copy the noun *post*; and the total number of polysyllables here is also very small. It may be remarked, too, that *st* after *o* in German and French has not the effect like a doubled consonant of giving to *o* what we call our short sound—that is the sound of *o* in *col*, but the true short sound heard in the first syllable of *rotale* (compare the German *post* and *trost* with the French *poste*).

Neither of the analogies we have cited exists in the case of *a* before *nd* or *nt*. It is true that the Italian sound has in the past been rather a favourite before these combina-

tions, as shown by its having subsisted so long in the words we dealt with in our last article (*daunt*, *haunt*, *laundry* and the like—eleven in all) although spelt with *au*. Yet as we there showed, these now all receive the *aw* sound; while of both polysyllables and monosyllables spelt with *nd* as well as *nt* the number wherein *a* is pronounced *ä* is much greater than the number wherein it is pronounced *ü*.

But as regards all the other combinations in our list, a desire to preserve the melody of the English tongue makes us eager to adopt the conclusion to which such a weight of analogy leads us; for outside them and some half dozen words where *a* precedes *th*, the beautiful Italian sound only occurs in our language before *l* and *r*.

We have, therefore, determined and we recommend our readers, wherever the letter *a* precedes *f* or *gh* with the sound of *f*, *ä*, *ns*, *nch*, *sp*, *sk*, *so*, or *st*, among all the words of our amended list, to give it its long Italian sound, but where it comes before *nd* or *nt*, then, according to the common rule as to double consonants, to give it its short English one.

M. L. ROUSE.

“OUR homes are hardly our own till we share them.” Who does not celebrate the taking possession of a new dwelling by calling his friends together to rejoice with him in its beauty and comfort, as if no mere material fires were enough for a true housewarming without that glow and radiance which, shining from sympathetic hearts and eyes, vivifies every nook and corner of the new habitation, and transforms what was mere carpenters' and masons' work into that heaven's vestibule, a *home*, in which the happy owners feel themselves at once masters and servants, priests and hosts, always busy, and yet infinitely at rest? And what house has not its “spare room,” its guest chamber, sacred to those whom love, duty, or compassion invite to its shelter? Hospitality is one of the primary instincts of man. Nor is it only an instinct. It is a virtue and sometimes a very lofty one. It is most touching among the poor, most graceful in the rich, and most difficult in the middle classes. To receive guests has been the pride of the English noble, the religion of the Arab, the amusement of the country squire, the sign of brotherhood among pioneers, the polite show of the Chinese, the joy of children, the delight and terror of young wives, and the duty, performed with varying mixture of pleasure and fatigue, of the average American. If there are any thoughts by which the pleasure can be made more and the fatigue less to our own countrymen, and especially countrywomen, for it is upon these that the care and labour chiefly come, let us consider them.—*Mary E. Dewey in Good Housekeeping.*

Educational Opinion.

USEFUL HINTS.—WORRYING.

IN these days, when so much is required of those who serve in our public schools, I feel a deep sympathy for teachers who are just beginning. I long to give them one motto which lies at the foundation of success—"Never worry!"

Even those who may be called veterans know that there are days when all the ills of school-life appear slowly to accumulate, until, as the afternoon draws to a close, it seems as if our tensely strained nerves must snap. We leave our school-rooms with the feeling that all our power is gone, and we are a perfect failure. Of course the most natural way is to go home, and, sitting lonely in our chamber, morbidly attempt to think our way out of the trouble, and cudgel our already jaded brains for plans for the morrow. In nine cases out of ten these plans will be worthless. The only healthy, successful course, at the close of such day's experience, is to seek the society of some congenial friend, who has no particular interest in our profession; or, if such a friend is not at hand, to read a good story.

At any rate, I would say to young teachers, resolutely put all thoughts of school away for an hour or two. If you cannot wholly succeed in this, you may gain some rest by trying to do so. Then, when you are refreshed, you can approach the subject, and will find that it has lost much of the dark horror with which tired nerves had invested it; and you will be surprised to see how readily a remedy will present itself, and how lightly you can begin the morrow's task.

More teachers wear out from the continued tension with which worry holds the mind than by hard work. As the end of the year looks us in the face, a fine opportunity presents itself to the worrying teacher.

I once asked a friend who had been very successful if, when she came to sum up a year's work, she ever tortured herself with thoughts of how much more she ought to have accomplished. Her reply had always been a sort of tonic for me. She said, "No! when I begin to worry, I immediately put the strength which I should have used in that way into additional hard work, and I find it is less wearing, and pays better. Then I let it all be."

I remember becoming partly discouraged at Normal School, and going to my respected principal for consolation. He said, "What should you think, if I told you that I sometimes look at the magnitude of the work before me, until just such feelings come creeping on?" I expressed the utmost astonishment, but eagerly asked, "Well, what do you do then?" His answer has had about as healthy an effect on my whole life as a

bracing northwest wind sometimes has on the physical system. It was this: "I say to myself, 'You fool, you, go to work and do the best you can, and let the rest go!'"

But, in no field of our efforts is it possible to become disheartened so thoroughly as in that of the moral training of our children. No conscientious teacher can fix the standard of what her position demands any lower than this: "It is my business, as far as I have opportunity, to see that my boys and girls make the best men and women they are capable of becoming." Or, using the illustration of that beautiful poem, *Discipline*, "I must try every means to bring the angel out of the marble."

How easy it becomes, with this aim in view, and having for our material the average children of to day, with heart and brain filled to repletion with all the interests which used to wait for riper years, to feel that we accomplish nothing.

Another inspiration from the same loved principal has sustained me through seventeen years of effort in this line. Said he, addressing me at the beginning of my work, "If now you should labour all your life for the moral good of your scholars, and at the close should only be able to point to one boy who had become a good man through your influence, when he would otherwise have been a curse to the world, would you feel that a single endeavour had been in vain?"

I have always said to myself since, "Surely, honest trying must accomplish so much;" and when we look at it with all its far-reaching results, we say it would be a glorious crowning of our work. And in my experience, as the years have gone by and the children have become men and women, many of them dear friends, and have told me of their grief for wrong-doing, and how much more they felt than they would own at the time, and as I have seen them filled with an earnest desire to be true men and women for life's duties, I have been more and more deeply impressed with the precious truth of that beautiful and encouraging passage, "He that goeth forth and weepeth, bearing precious seed, shall doubtless come again with rejoicing, bringing his sheaves with him."

The best argument which I know against worry is, that it defeats its object; for in all cases you are using the very strength you need for work, and thereby insuring just the result of failure which you fear.—*New England Journal of Education*.

THE NEWSPAPER IN THE SCHOOLROOM.

A WRITER in the *Current*, after deploring the lamentable ignorance of public affairs and passing events displayed by the average scholar of the schools of the

country, thus argues for the introduction of newspapers into the public schools:—"Remove the old fashioned reading books from the schools, and replace them by the better newspapers of the country. Of course this is not meant to apply to the primary reading books—the primer, first and second readers. It may be objected that the average newspaper contains a good deal of so-called news that would be injurious rather than beneficial, to the youthful reader; and that the style of language used by many newspaper writers is not of a sufficiently classic character to be utilised for the cultivation of the youthful mind. To the first of these objections it may be answered that, while it is true that much that would be at least worthless in the education of the youth is published by all newspapers, yet the judgment and discretion of the intelligent teacher may be safely relied upon to select only that for perusal which will be both beneficial and instructive. As to the second objection, it may be said that while it holds good in many—alas! far too many—cases, yet there are plenty of newspapers in the country that can be relied upon as not only honest exponents of current events and public opinion thereon, but also equally as fair representatives of the purity of the English language as are the school readers. A good deal of thought and some little investigation of this subject has convinced me that the adoption of some such policy as is here suggested would be a long stride toward perfection of what is already the best and greatest and grandest educational system in the world.

MAY CHILDREN GO BARE-FOOTED?

THIS question is every now and again proposed for discussion; and when it is so, we are compelled to give the same answer. On physiological grounds, it is manifestly a sound practice to accustom children to develop the circulatory and muscular systems of the lower extremities, precisely as those of the hand are developed by free use and exposure. It is not supposed to be either necessary or desirable that children should wear gloves for hygienic purposes. When the hands of little folks are thus decorated, the parental idea is confessedly to give them what is conventionally regarded as a genteel appearance. No one thinks that a child ought to be protected from the weather so far as its hands are concerned. On the contrary, it is recognized that the upper extremities should be kept warm by exercise and habitual exposure.

Precisely the same view holds good with regard to the lower extremities. Contact with bodies that abstract heat, even more than the earth abstracts it, is an almost con-

stant condition of child life. In short, it is entirely in deference to fashion and the usages of society that children wear foot-coverings. There is much to be said in favour of a more natural practice. The foot is an organ of wondrous complexity, regarded as a bony and muscular apparatus. It is, moreover, provided with nerves and blood vessels of especial intricacy. The softest and most flexible shoe, to a very great extent, and a boot almost entirely, reduces this organ to the character of a jointed block with little self movement. Obviously this reduction must detract not only from the efficiency of the foot, but of the organism as a whole. If the blood vessels of the foot and leg are fully developed, as they can only be when the foot is habitually exposed, the quantity of blood which the lower extremities can be made to receive and, if need be, attract for a time, is very considerable.

We can only say that children who are allowed to go barefooted enjoy almost perfect immunity from the danger of "cold" by accidental chilling of the feet, and they are altogether healthier and happier than those who, in obedience to the usages of social life, have their lower extremities permanently invalidated, and, so to say, carefully swathed and put away in rigid cases. As regards the poorer classes of children, there can be no sort of doubt in the mind of any one that it is incomparably better that they should go barefooted than wear boots that let in the wet and stockings that are nearly always damp and foul.—*London Lancet.*

THE VIEWS OF DR. McCOSH ON THE EDUCATION OF CHILDREN.

THE following remarks of Dr. McCosh, President of Princeton College, are instructive and suggestive in the education of children :

Children, at the outset, ought not to be sent to school before the age of six years, and even then they should not be subjected to a severe course of instruction. In getting an education, a person should begin with the simplest form of study, and gradually develop to something better and higher. The languages might be studied by children to advantage, if care is taken not to impose too much on the mind. In my experience, children learn languages more readily than persons of mature age. I began the study of Latin at the age of nine years, and that of Greek one year afterward.

After giving much thought to the subject, I am prepared to defend the opinion, that a boy should be ready for college at sixteen years of age. Students should not apply themselves closely to one branch of study to the exclusion of all other branches. There

ought to be a judicious mixture of the various branches. The highest aim of an education is the cultivation of the mind. A proper education could not be exclusively scientific or exclusively literary. The question whether religion should be taught, will, during the next ten years, be a very keen, burning question in American colleges. I believe in respecting the religious convictions—or want of convictions—of college students, but it is the duty of colleges to teach the Christian religion to their scholars, and let the latter see what there is in religion. No college would be perfect without science, no college would be perfect without literature, and certainly no college would be perfect without religion.

In the education of women, I would apply about the same principles that are applied to men, with the difference that women should be taught a little more literature and a little less science.

In reply to the question, "Is it not true that a large number of persons are unable to obtain employment, because their education and sensibilities are above the wants of the society in which they live?" my reply is that I do not know of any case where education has hurt anybody. If a man has good health, and is industrious, a good education would qualify him for a dozen different things, where an ignorant man could only do one. Education properly used would enable a person to rise in any sphere of labour.

COURTESY AT HOME.

AMONG brothers and sisters a little harmless banter is perfectly admissible, and even, perhaps, desirable; but a family whose members are always snapping at each other in the style at present approved of as clever, both in fiction and in reality, can scarcely be upheld as a model of courtesy at home. Both among brothers and sisters, and husbands and wives, a great deal of talk which begins with chaff ends in rudeness. In society conventional politeness sets certain limits to repartee, but at home there are no such barriers. In private life, when the more refined weapons of conversational dispute fail, the combatants are apt to resort to vulgar personal abuse. Servants could sometimes tell curious stories about the courtesy of their employers at home—or, rather, the want of it. There are ladies renowned for their charming manners in society, who use their maids as safety-valves for the innate rudeness which they contrive to repress and conceal in public. Doubtless they are hurt when, in dressing their heads, their maids drag the hair with the brush; but that is no excuse for pretty mouths permitting ugly words to escape from them. The master may be very fond of his horse; but, after speaking to the animal in tones of the gent-

est affection, it is scarcely the sign of a courteous gentleman to swear at the groom because his stirrup leathers are too short. Courtesy at home, like other virtues, cannot be practised too constantly, or be too well fortified by undeviating habit. Even when a man is alone, it is not well to throw aside too freely the restraints and observances of social usages. We do not hesitate to say that no one can, when alone, discard all customary forms and ceremonies in dress, meals, or the like, without incurring danger of self-degradation. A man who neglects his toilet when he is going to spend the evening in his own society is decidedly wanting in self-respect, and the bachelor, who only makes his rooms comfortable and attractive when he expects visitors must be pronounced unworthy of promotion to the more dignified state of life to which all bachelors presumably aspire.—*From "Dulce Domum."*

AFTER all, our greatest work is not that which at the time *seems* to be great; and the epochs of our lives are not always heralded by a signal-flag on the turret outlook of our anticipations, nor are they always marked by a red letter in the calendar of our memories. The opportunities of doing an obviously great thing are rare; but the opportunities of doing our simple duty, which may have infinite consequences of good or ill, are at every moment of our lives, wherever we find ourselves. A single sentence of counsel or of warning to a child, in the home circle or in the Sunday-school, may shape his course for all the future, in a line of conduct not thought of by us at the moment. An approving word, or a hearty hand clasp, to a weary friend may be just the means of stimulus and cheer to him in his need, which shall enable him to do a work for others, over which he and we shall rejoice together when the books are opened. A personal note which is written under the pressure of a sense of duty, or a brief paragraph prepared at the printer's call for another "stick" of copy, may have larger permanent results in the impulse it brings to its reader—known or unknown—than an ambitious volume which cost many toilsome days of research and of writing. In fact, the best thing for us to do, in the hope of greatest good, is the one thing that is to be done *now*. Nothing that we do is great in itself. God can use our least doing for great results.—*Sunday School Times.*

ALFRED R. C. SELWYN, F.R.S., F.G.S., LL.L., director of the Canadian Geological Survey, and ex-Senator Hectar Fabre, commissioner of France in Canada, have been created Companions of the most distinguished Order of St. Michael and St. George, in recognition of their services at the Colonial Exhibition, London.

TORONTO:

THURSDAY, AUGUST 12, 1886.

FORESTRY IN SCHOOLS.

I SHOULD like to suggest to school-masters in country districts, who may wish to impress on their pupils the value of forest preservation, that they might obtain a valuable lesson from the present state of our wheat fields. I hear from many districts that great damage has been done to unsheltered crops, but that where a forest or row of trees gave its shelter much better grain will be obtained.

Now if the teachers who wish to speak on this matter were to obtain some practical observations from their neighbourhood, and mention them, stating cases and results, to their schools, it would afford an excellent opening for a discourse on the various evergreens valuable for wind-breaks, the method of planting them, and so forth.

Knowledge given in this way, from a practical standpoint, speaking of matters in which all are interested, would be retained through life, and probably be productive of valuable action at some future day.

There might also be well added a correction of the general idea that because a man has bought a piece of forest he has a right to cut it down; and it might be well stated that that right is dependent on the general welfare, and that in most countries restrictions on unlimited clearing of forest have been found absolutely vital to the well-being of the community.

In fact, the subject opens up vast possibilities of valuable discourse. Would it not be better to teach the young such things than to gorge their minds with abstruse subjects—or rather with the rudiments of abstruse subjects, for few get beyond them—subjects which in after life, nine times out of ten, they neither see nor hear of?

R. W. PHIPPS.

THE RECENT EXAMINATIONS.

THE storm which has arisen over the departmental examinations, shows no sign of abating. Some portion of the denunciation is, no doubt, due to personal animus, as the criticisms themselves make clear. Another and a larger portion is due to the disappointment of candidates who came up badly prepared. This is substantially the assertion made by Prof. Young, in a published and quasi-official letter.

Dealing with the algebra paper set by Mr. J. C. Glashan, for second class teachers, he admits that he saw it before it was published, and that he approved of it as being not too difficult "for second class teachers prepared as they ought to be." He intimates that he is still of that opinion, though he is forced to confess that "the candidates coming up for examination" were, in the great majority of cases, unequal to the task of grappling with it. This is a mild way of telling the High School teachers that their pupils were sent up insufficiently prepared, and this most of the High School masters would be quite ready to admit. For this, however, they are not to blame. Teachers who have taught as long as the law allows on a third class certificate go to a high school to prepare for a second class examination. They desire to get through in the shortest possible time, and if one high school master will not undertake the task another will. The result is "cramming," superficiality, "plucking" and grumbling. The teachers who are in the profession desire to make access to it more difficult; they will have to consider whether such a policy is compatible with lowering the standard of literary and scientific training. If Prof. Young's opinion of the second-class algebra paper is correct, then to let candidates through who have not done a fair proportion of it would be an unjustifiable proceeding in the interests of the teachers themselves. Those who talk of forming a guild of preceptors might be expected rather to petition for greater stringency. The whole subject will, no doubt, be thoroughly ventilated at the approaching convention. What is becoming increasingly clear is that the Department will sooner or later have to employ experts for examiners in the different subjects, and will have to change the examiners from time to time, just as the Provincial University now does. Certainly the general standard for the different grades is none too high now, and there is no good reason for lowering it.—*Montreal Witness.*

OUR EXCHANGES.

St. Nicholas for August vies with its predecessors in excellence.

The Popular Science Monthly for August contains, as usual, excellent reading matter. We cannot do better than reproduce the table of contents: "Woods and their Destructive Fungi," by P. H. Dudley, C.E. (Illustrated); "An Economic Study of Mexico," by Hon. David A. Wells (concluded); "The Extension of Scientific Teaching,"

by Prof. T. H. Huxley; "A Canadian Chapter in Agrarian Agitation," by George Hles; "Genius and Precocity," by James Sully, M.A.; "The Progress of Psychological Research," by Prof. N. M. Butler; "Causes of the Present Commercial Crisis," by Paul Leroy-Beaulieu; "The Physical Laboratory in Modern Education," by Prof. Henry A. Rowland, Ph. D.; "Mineral Springs of Eastern France," by Titus M. Coan, M.D.; "Good Time and its Ascertainment," by Prof. Isaac Sharpless; "Recent Progress in Chemistry," by Prof. H. C. Bolton; "The Prediction of Natural Phenomena," by Dr. A. Schaff; "Sketch of Oswald Heer," (with Portrait); Editor's Table: "The Church and State Education, etc.;" Literary Notices, Popular Miscellany, Notes.

REVIEWS AND NOTICES OF BOOKS.

Plutarch's Lives. Clough's Translation. Abridged and Annotated for Schools by Edwin Ginn. With Historical Introductions by W. F. Allen. Boston: Ginn & Co.

This is one of the best numbers of the "Classics for Children" series yet published. The abridgement brings this classical work within the reach of a very large number of readers to whom otherwise Plutarch's *Lives* would have been a name only. The introductions by W. F. Allen are very valuable. They preface each of the *Lives*, and contain just such information as is necessary to a better understanding of the text.

Illusions of the Senses, and Other Essays. By Richard A. Proctor. New York. J. Fitzgerald.

We have not very much faith in Mr. Proctor. His popular expositions of scientific subjects are often, we think, more popular than scientific.

The volume before us contains eight essays: "Illusions of the Senses," "Animals of the Present and the Past," "Life in Other Worlds," "Earthquakes," "Our Dual Brain," "A New Star in a Star Cloud," "Monster Sea-Serpents," "The Origin of Comets."

The cheap form (15 cents) will be the best inducement to purchase it.

A Heart-Song of To-Day (Disturbed by Fire from the "Unruly Member"). A Novel. By Mrs. Annie G. Savigny. Toronto. Hunter, Rose & Co. 1886.

A Canadian novel of the length and pretensions of *A Heart-Song of To-Day* is a rarity. For this very reason, therefore, if for no other, Mrs. Savigny's book will no doubt create widespread interest. But it will do this on its own merits. At the very outset we are introduced to characters which at once arouse curiosity, and this curiosity, is maintained to the end. It would be unfair to give our readers any clue to the plot; but we may tell them the headings of some of the chapters, for these will, we feel sure, tempt them to peruse the whole work: "A Pretty Woman Lays a Plot;" "Love and Love-Making;" "Vaura in a Medley;" "Velvet Paws Conceal Claws;" "Heart-Stirs;" "For a Fair Woman-Face;" "Quickened Heart-Beats;" "Slain by a Woman;" "Woman against Woman;" "Heart to Heart;" "An Exposé;" "Society on Tip-Toe;" "Dual Solitude."

Astronomy by Observation. An Elementary Text-Book for High Schools and Academies. By Eliza Bowen. New York: D. Appleton & Co.

"This book," says the authoress, "has grown out of actual school work, in which it was the teacher's object to make pupils studying elementary astronomy *observe* and *think*," and from preface to *finish* the volume gives evidence of this fact, and evidence, also, of the authoress's success. The principles upon which the method is founded is interpretation linked to observation, and as aids to these the work is embellished with a large number of most beautiful plates—several of them coloured.

Messrs. Appleton may congratulate themselves on having produced a most handsome text-book, and the writer upon having finished teachers and pupils with a most valuable one.

Selections for Written Reproduction. Designed as an Aid to Composition Writing, and Language Study. By Edward R. Shaw, Principal of the Yonkers High School. New York. D. Appleton & Co.

The author of this work holds that, "One of the best means of language-training is reading a selection to a grade or class and requiring them to reproduce it in writing. The value of such exercises consists in the natural and easy way in which the pupil gains a command of language. Written reproductions from memory form the best basis to lead into original composition, and what, moreover, is of the utmost importance, they give the pupil an opportunity by his own practice to discover his errors and inaccuracies and work out of them. Through careful and suggestive criticism by the teacher, all the principles of composition become known; not, of course, in a formulated way, but in the way which gives the pupil power to avoid errors without being hampered by rules."

The book is divided into three parts.

Part I consists of selections purely narrative or descriptive in character, experience proving that such are best adapted for beginners.

In Part II. the selections contain quotations, and are more difficult of punctuation.

Part III. contains material adapted to advanced grammar grades and classes in rhetoric.

Suggestions to teachers are given at the beginning of each part.

The selections are very happy; well graded; and are chosen from a large circle of writers. The book will be a great boon to teachers.

QUIDA has written a new romance, entitled "The Story of a House Party."

VON RANKE'S seventh volume of the "History of the World" is ready for the press. Dr. Weidemann, an intimate friend of Ranke, is also preparing the unpublished manuscripts of the historian for the press.

THE "History of the Civil War in America," by the Comte de Paris, will not be finished at present, and the Philadelphia publishers have been so informed. Exile interferes with the author's historical labours.

MR. ALFRED AUSTIN is finishing a long dramatic poem called "Prince Lucifer." The story, which is a romantic one, the action of which takes place in the neighbourhood of the Matterhorn, is intended

to reflect, in a fanciful garb, the religious conflict and ethical uncertainties of the age.

THE first three chapters of Clark Russell's new novel, "The Golden Hope," which Messrs. Tiltson are about to issue to the British provincial press, are said to be full of promise, and to have all the charm of the author's previous sea-stories.

MR. GEORGE AUGUSTUS SALA, who has once more begun his delightful "Echoes" in the *Illustrated London News*, is about to commence in *Tinsley's Magazine* a series of articles entitled "P. and O. Papers." These will be the record of his journey from Melbourne to Mecklenburgh Square, by way of King George's Sound, Ceylon, Madras, Aden, Suez, Port Said and Marseilles.

It is announced by Mr. Charles Scribner, of Charles Scribner's Sons, that within a short time his firm will begin the publication of a new illustrated monthly magazine, which will be known as *Scribner's Magazine*. The date of the first issue has not been definitely fixed, but publication will be commenced as soon as the arrangements for conducting such an enterprise have been completed.

WE have received the following from Messrs. Ginn & Co., Boston. *Journal of Morphology*. The establishment of an American journal of morphology will, it is confidently believed, meet a need long felt both at home and abroad. The means of publishing offered by our scientific societies are confessedly inadequate, and the bulletins and memoirs issued by a few institutions make no pretensions to fulfilling the functions of a journal. The result is that valuable papers are often shelved for years, or, perhaps, indefinitely; some are published with illustrations of an inferior quality, and others are sent to foreign journals. In the latter case, duties are levied on the few copies sent to authors, who thus find themselves called upon to pay for their own productions. The inaccessibility of our zoological literature—scattered as it is among the various publications of so many societies and institutions, and mixed up with a mass of heterogeneous matter that has no value for a zoologist—is notorious. Zoologists cannot be expected to subscribe for these mixed publications. However freely papers may be distributed, they must remain unknown to many workers a year or more after publication. With a journal the case is different. Every zoologist takes it, or has access to it through libraries. It reaches him without delay, which is an advantage of the utmost importance. It is proposed, therefore, to establish a journal of animal morphology, devoted principally to embryological, anatomical, and histological subjects. Only original articles, which deal thoroughly with the subject in hand, will be admitted to its pages—short notes, desultory observations, etc., being excluded. The journal will be issued in parts, each containing, as nearly as we can now estimate, from one hundred to one hundred and fifty pages, and from five to ten double plates. The size will be crown octavo, the usual magazine form. For the present only two numbers a year will be issued, and the subscription price will be \$6.00 per volume (two numbers). Single numbers will be sold at \$3.50 each. The plates are to be executed by the most competent lithographers in the country, and the paper and press-work will be of the best quality. The Journal will depend for its contrib-

utors upon eminent morphologists who represent the principal centres of research in the United States and Canada. Authors will receive forty copies of their articles. The number of subscribers to such a journal will, of course, be small; and, under the most favourable circumstances, several years must elapse before it can become self-supporting. It is hoped, therefore, that those who desire to see the enterprise succeed will not fail to do their utmost in adding to its subscription list. The subscription to be paid on the issue of the first number, which, it is now hoped, will be published early in 1887. Cordial promises of co-operation and support have been received from Joseph Leidy, University of Pennsylvania; E. D. Cope, the Smithsonian Institution; A. S. Packard, Brown University; W. J. Sedgwick, Massachusetts Institute of Technology; W. K. Brooks, Johns Hopkins University; W. B. Scott, Princeton College; H. F. Osborn, Princeton College; E. L. Mark, Harvard University; E. B. Wilson, Bryn Mawr College; R. Ramsay Wright, University College; Benjamin Sharpe, University of Pennsylvania; C. S. Minot, Harvard University; John A. Ryder, the Smithsonian Institution; Alpheus Hyatt, Massachusetts Institute of Technology; Walter Faxon, Harvard University; S. I. Smith, Yale College; Burt G. Wilder, Cornell University; S. H. Scudder, Cambridge; S. F. Clarke, Williams College; S. H. Gage, Cornell University; Howard Ayers, Michigan University; William Patten, Boston; J. S. Kingsley, Boston; John P. Marshall, Tufts College; H. W. Conn, Wesleyan University; E. A. Birge, University of Wisconsin; H. F. Nachtrieb, University of Minnesota; L. A. Lee, Bowdoin College; Edward Phelps Allis, Jr., Milwaukee; Geo. W. Peckham, Milwaukee.

Our readers will notice with pleasure the name of Professor R. Ramsay Wright in the foregoing list.

BOOKS RECEIVED.

The Canadian Congregational Year Book, 1885-6. Editor. Rev. W. H. Warriner, B.D., (Toronto: Congregational Publishing Co.) gives full and detailed information and reports upon all subjects of interest to the members of this body throughout the Dominion.

The Catalogue of Woodstock College for 1885-6, with the Announcement for 1886-7, and the Catalogue of the Commercial Department of Woodstock College for 1886-7 set forth in detail the aim and scope of those institutions.

Illusions of the Senses, and Other Essays. By Richard A. Proctor. New York: J. Fitzgerald. 1886. 41 pp. 15 cents. ("Humboldt Library.")

Elements of Analytic Geometry. By G. A. Wentworth, A.M., Professor of Mathematics in Phillips Exeter Academy. Boston: Ginn & Co. 1886.

Selections for Written Reproduction. Designed as an Aid to Composition Writing, and Language Study. By Edward D. Shaw, Principal of the Yonkers High School. New York: D. Appleton & Co. 1886.

Astronomy by Observation: An Elementary Text-Book for High Schools and Academies. By Eliza A. Bowen. New York: D. Appleton & Co. 1886.

Methods and Illustrations

SCHOOL DECORATION.

AT this summer season a few words on the way in which nature may be made to contribute to the attractiveness of the schoolroom, and indirectly to all homes, may not be out of place. Many of the suggestions are capable of being carried out in any girls' school, either in town or country, for what does not apply to lanes and woods will be practicable in the more densely populated streets of our large towns. Given a teacher full of love for the honourable office of teaching, and a deep interest in her pupils, and all that appertains to school life, and the rest will be comparatively easy. Let me preface my remarks by saying, that only unpretentious little ornaments for the walls are intended, and that boys with skilful fingers, and handy at tools, might improve very considerably on some of the hints, and make a gallant show by means of fret-work, useful little brackets, stronger picture frames, and many other contrivances which their ingenuity will invent. Teachers may do much to elevate the minds of the classes they have to deal with, by implanting a love for nature, and by giving a taste for the refinements of life, to say nothing of the benefit that will be derived by the children being taught to turn their hands to anything.

Without touching upon the use of flowers in a schoolroom, which deserves a chapter to itself, I will remind my readers that now is the time to search in the woods and dells for ferns; if some of the soil be brought with the roots, and both put into a flower-pot of convenient size, they will add grace and beauty to any room, and will often refresh weary eyes by a sight of their greenness. The large common ferns would fill up the ugly vacant space in the fire-place, while tops of cupboards and any corners of the room will be improved by their presence. Smaller ones form a pretty ornament for the mantel-shelf, window-sills, and any places where they will not get too much sun. They may also be put into wire baskets with some moss, and hung from the gas brackets. Any specimens of rare ferns, pretty leaves, and flowers may be pressed by being laid between leaves of blotting paper, or soft paper, and having a heavy weight placed on the top. They should occasionally be changed until all the moisture is dried out. These arranged tastefully on a white back-ground form very effective little pictures. Grasses should be gathered and kept for the winter, and then put into the ordinary vases used for model drawing, which are too often put out of sight in some corner or cupboard, instead of being used as ornaments for the mantel-shelf. The *Graphic*, *Illustrated London News*, and other illustrated papers, provide every year, a number of good pictures,

both coloured and plain, which look very well on walls. Many other journals publish at least two or three plates during the year, all of which should be taken care of. The almanacks too, so plentiful nowadays, are often copies of Royal Academy pictures, and many of them are far more beautiful than pictures for which our grandparents had to pay large sums. These are given away so freely by shop-keepers, that when I asked for a few in the school some time ago, dozens more than I required were brought. In this way, all the pictures needed will be forthcoming, but if not, an appeal to friends interested in the school would soon bring more. The scholars will naturally take more interest in what they supply themselves, so, on this ground, it is well not to solicit aid until it is really needed. As I have hinted, the frames are of very simple construction, and may be easily improved upon. The foundations are formed of laths, such as are used for the bottoms of window-blinds, and which may be readily got. Obliging brothers and fathers will often make them. These are arranged like the Oxford frames, the ends projecting about two inches beyond the corners. They should be glued together and a small tack put in afterwards, but if more than one be put in the wood will probably split. A coating of glue is next laid on the frame, and the ornamentation is put on whilst the glue is wet. This may consist of Indian corn, arranged regularly or irregularly; corks cut up into tiny pieces sprinkled over; corks cut into rounds about one-third of an inch deep. These rounds are cut into semi-circles, which are arranged curve outwards along each edge of the frame, leaving a space of about half-an-inch down the centre, over which is laid whole circles. Instead of the whole round down the centre half-walnut shells, placed lengthways look very well, as do also acorns. Walnut shells placed side by side are very effective and substantial. A very pretty frame was brought by one of my girls. Her father had made her a strong foundation of wood, and she had arranged beech husks and small cones from the Scotch fir alternately. The picture consisted of pressed ferns nicely arranged, in front was a glass, and the back was covered over with strong paper. All the frames described last longer and look brighter if coated over with thin varnish that may be bought for sixpence per bottle. Another frame is very simple and easily made. It is simply the black beading found on the lower edge of almanacks. Four of these are crossed Oxford fashion, and a tack put in the corner. The picture is glued to the back, and a tape fastened on to hang it up by, and a strong paper covering all over the back. Brown paper rosettes that children often make look very well. The small frames made of straw do nicely for little pictures, and the coloured ribbon at the corners rouse great admiration

in the breasts of the little ones. I must not omit to mention the more artistic frames made of fir cones, beech nuts, hazel nuts, and, indeed, any produce of the woods during autumn which are arranged in any fashion that fancy dictates, and which looks very elegant. I have seen brackets, work-baskets, letter-racks, and many other useful and ornamental articles made to look little inferior to leather work.—*The Teachers' Aid*.

MENTAL ARITHMETIC.

MENTAL arithmetic should not be taken up before the sixth year in school, possibly not before the seventh. Intellectual power is a matter of growth. Among strong men of the day, perhaps a much larger percentage owe their ability to a systematic, conservative training than to inherited gifts. The law of this growth is that the reasoning power is a faculty of mind which follows the others in development, and in a certain degree depends upon them for its highest advancement. To place mental arithmetic, a study which calls into combined use, attention, memory, and reason—to place this at an early point in the child's school life would be to rob the other faculties, or even to dwarf those called into action. Before he is put to this test, the child should have obtained sufficient strength in attention, perception, imagination, and reasoning, to combine some of these upon a more difficult subject than he has yet had, without detriment.

Many hold that memory should not be included in mathematical work. Our answer is short. Memory grows strong by association of ideas. One man remembers faces, another names. One student remembers translations, another experiments, while a third with vivid imagination can recall at any time many an anecdote from history and literature classes. There is a lack in our schools to-day of a systematic training of the memory as associated with mathematical operations.

We hear much in these days of business education. It is a general idea among business men that a boy must leave school at an early age in order to become successful. A school or college diploma has little or no influence when offered as a recommendation; indeed in some of our largest houses there is a strong prejudice against such graduates. One business man expressed the sentiments of many when he said, "We want to educate our own boys and then they can do something." The reason for this is that there is a kind of work required constantly in business for which the student has not received the training in school. It is not true that there is a greater difference between the facts learned in school and business, than between those learned in school and the professions. But the difference between school and business in method is radical. One

single instance may cover thirty that occur in an office during a day, varied in kind and circumstance, but the general character remaining the same. The head of the house calls the clerk to his desk, and in a short, terse way, says: "Mr. Blank is here. He claims that on his invoice, June 1, there were short ½ doz. hammers, 2 doz. pln. skimmers, 1 doz. Ret. Kens Pans 12 qt.; that he was overcharged ½ ct. on Russ. iron; cash disc't \$1.15 was not allowed on stamped ware. Look it up and report." If this clerk can give the facts in a few moments, promptly and accurately, he is the man for the position; otherwise, let him look elsewhere. Business men have no time to dally. Ability to do this work can be obtained in a class in mental arithmetic more easily than in any other study in the lower grades. We have seen a wholesale house try for three months to secure a competent entry clerk, which position ought to be filled by any boy sixteen years old, who is a rapid penman and proficient in mental arithmetic. Teachers do not see this work, and therefore do not feel its importance.—*Principal H. W. Callahan, of Penn Yan.*

A LIST OF WORDS FOR PRO-NUNCIATION.

THE following is the list of words set at Chautauqua recently for competition in pronunciation:—

With, of, doth, perfect (verb), Aaron, abdomen, abstractly, accent (substantive), acclimate, address (substantive), aeronaut, aforesaid, aged, allopathy, almond, alternate (adjective), amenable, antepenult, apricot, Arab, Asia, aspirant, aunt, ay (yes), bade, banquet, bestial, bellows, biography, bitumen, blackguard, blatant, bombast, bonnet, booth, bouquet, bravo, breeches, brethren, brigand, bronchitis, caisson, caldron, calf, canine, carbine, cerements, certain, chasten' coadjutor, comely, comparable, conjure (to influence by magic), construe, contumely, courteous, courtier, covetous, clique, cuirass, daunt, deficit, demoniacal, designate, desuetude, direction, dishonour, docile, dost, dromedary, drought, trough, ecumenical, enervate, envelope, evil, excursion, equation, exemplary, exile (verb), extempore, falcon, figure, filial, female, finance, forehead, forge, fortress, gallows, gauntlet, ghou!, gooseberry, gourd, granary, grease (substantive), grimace, grimy, guano, gyve, halibut, hymeneal, hypocrisy, illustrate (verb), incursion, inquiry, integral, isolate, jugular, juvenile, laundry, learned (adjective), legislature, lenient, luxury, maritime, mirage, misconstrue, opponent, pantomime, parent, partiality, paths, patron, Penelope peremptory, presbyterian, presbytery, quay, saith, solve, seine (a fishing net), re-arches, slough (the cast off skin of a snake), spinach, suffice, recess,

sinecure, toward, suite, sovereign, pianist, preface (verb), matron, sheik, supple, satyr, sacrilegious, tiny, ruffian, saunter, schism, Lucy, Susan, plait, sarsaparilla, mercantile, raillery, precedence, reasoning, pyramidal, version, worsted, Philemon, Matthew, launch, livelong, quickening, betrothal, alias, vagary, vehement, route, sevennight, caoutchouc, resumé, financier, wont, conversely, rapine, truths, visor.

To these we may add the following sentences:—

Comely Diana had a voice like a calliope; yet, although it was not enervated by laryngitis, she was not a virago. She wore a stomacher set with jewels, that gave an interesting idea of her father's finance. There was no squalor in their vicinage. She sought to inveigle her charity coadjutor into a hymeneal association without tedious delay. She sent him her miniature, a jessamine flower, and an invitation to a dinner of anchovies. He was a coadjutant in the church. He had a cadaver-like complexion, and in a joust he had been houghed. Taking some almonds as a bridal gift, he mounted a dromedary with the epizootic and hastened without digression along Pall Mall. The guests were sitting on a divan, with no prescience of evil. The diocesan was waiting, having finished an absolution service, when suddenly above the clangour of the wedding bells, was heard a maniacal shriek. The groom had pierced his carotid arteries with a carbine on hearing that a deficit in his church collection had been discovered. He was cremated.

TRUANT SCHOOLS.

WHEN a London boy of school age is found to be habitually absenting himself from means of instruction his parents or guardians are notified of the act by the school board visitor for his district. If this warning produces no effect the case is referred to a divisional committee of board members, who issue a "notice B," as it is called, summoning the responsible parties to show cause why the child should not attend school. If no valid cause can be shown, the order is that the magistrate shall deal with the case, and accordingly the young defaulter is taken to a police court. On a first appearance here he will be let off if his parents pay a small fine. But if he proves an incorrigible offender the magistrate will be compelled to commit him to an ordinary industrial school or to the truant school. In either case the order should give power to the authorities to detain him, if necessary, till he reaches the age of sixteen. If the order refer the boy to Upton House, he is taken thither by a policeman, who obtains a receipt for him from the governor. The work of reformation then com-

mences without delay. The lad strips, and his clothing is first baked in an oven and then put away. When his clothing is very bad, it is burned to ashes. The boy is then put through an ordeal of soapsuds and scrubbing brushes, and rigged out in a plain uniform of the school. A brief lecture is delivered to him, in which he is informed that as soon as he shows by his conduct that he is fit to go out into the ordinary school world again he will be permitted to depart, respectfully clad, and on license—that is, subject to recall on the first sign of misbehaviour. Usually the poor little fellow enters the place ragged and filthy, famished in body and weakened in intellect by the miserable life he has been living. It is an extraordinary fact that most of the truants committed to Upton House are possessed of a crime for "sleeping out." Some have hardly any homes worthy of the name; many come from clean and comfortable dwellings; but all by preference sleep away from parental supervision, in stables or carts, or in the fields.

Summer and winter, the Upton House lads rise at six. At seven they begin to clean up the house and school. At eight they breakfast. After prayers, they go to school at nine. At one they dine. From the entire hours of the day they only snatch thirty minutes for play. Drill, schooling and manual labour fill up the tir - till eight, when they are packed off to bed. Except during one and a half hours, no conversation is allowed among them. The schooling is conducted on the "half-time" principle. One-half of the scholars are at lessons while the others are employed in mental tasks. The entire staff for the management of the establishments consists of a governor, a matron, two teachers, two labour masters, one housemaid, one laundrymaid. The boys chop enough bundles of wood to supply all the school boards of the district. They make their own beds, darn their own clothes, scrub the floors, wash everything they wear, cook their own victuals and do some gardening. All these duties they perform in gangs, maintaining strict silence the while. The feeding of the scholars is wholesome and ample. They have beef twice a week and the other articles of diet are porridge, soup, cocoa, dripping, suet pudding, rice and bread. A month of this regimen, combined with healthy labour and habits of cleanliness, usually adds half a stone to a boy's weight, and within a few weeks we have known a lad's appearance to change so much that we were unable to recognize him from the wretched looking creature he had been on entering. As a whole, the boys look healthier and brighter by far than boys in an ordinary threepenny school, while comparison between them and their compeers of the penny schools in Drury Lane or the Borough is out of the question.

Mathematics.

THIRD CLASS ALGEBRA.

Examiner—J. C. GLASHAN.

1. Divide :

$$\left(\frac{x^2+a^2}{a^2+x^2}-2\right) \text{ by } \frac{a-x}{x-a}.$$

2. Simplify :

$$\frac{1}{4(x-1)} - \frac{1}{4(x+1)} + \frac{1}{(x-1)^2(x+1)}$$

3. Simplify :

$$\left(\frac{x+y}{x-y} - \frac{x-y}{x+y}\right) + \left(\frac{x^2+y^2}{x^2-y^2} - \frac{x^2-y^2}{x^2+y^2}\right).$$

4. Prove that :

$$\frac{a+b}{ab} \left(\frac{1}{a} - \frac{1}{b}\right) - \frac{b+c}{bc} \left(\frac{1}{b} - \frac{1}{c}\right) - \frac{c+a}{ca} \left(\frac{1}{c} - \frac{1}{a}\right)$$

is the difference of two squares.

5. Resolve into linear factors :

$$(a^2+bc+ca+ab)(b^2+ca+ab+bc)(c^2+ab+bc+ca).$$

6. Resolve into three factors :

$$(x+y)^2(x^2+z^2) - (x+z)^2(x^2+y^2).$$

7. Shew that there is only one value of x that will make

$$x^3+6x^2+8Sx^2+10x^3$$

equal to the cube of $x+2c$, and find that value.

8. Solve the equation :

$$\frac{x-1}{x-2} - \frac{x-2}{x-3} = \frac{x-5}{x-6} - \frac{x-6}{x-7}.$$

9. Solve the simultaneous equations :

$$\frac{2x-y}{1} = \frac{2y-z}{2} = \frac{2z-u}{4} = \frac{2u-x}{8} \quad 15.$$

10. Find a number less than 100, the sum of whose digits is 12, and whose digits if reversed form a number which is greater by 6 than half of the original number.

SOLUTIONS.

1. The dividend is seen to be

$$\left(\frac{a}{x} - \frac{x}{a}\right);$$

the divisor is

$$\left(\frac{a}{x} - \frac{x}{a}\right);$$

therefore the quotient is

$$\left(\frac{a}{x} - \frac{x}{a}\right)^2 \text{ or } \frac{a^2}{x^2} - \frac{x^2}{a^2} - 2\left(\frac{a}{x} - \frac{x}{a}\right).$$

2. Combine the first two fractions, then the result with the third fraction. The answer is

$$\frac{1}{2(x-1)^2}$$

3. Find the difference of the quantities in the first bracket, also of second bracket. The first difference is

$$\frac{4xy}{x^2-y^2};$$

the second difference is

$$\frac{4x^2y^2}{x^4-y^4};$$

the result is

$$\frac{x^2+y^2}{xy}.$$

4. The first, the second, and the third fraction stand, respectively,

$$\left(\frac{1}{a^2} - \frac{1}{b^2}\right), - \left(\frac{1}{c^2} - \frac{1}{b^2}\right), - \left(\frac{1}{c^2} - \frac{1}{a^2}\right).$$

These combined are equivalent to

$$\frac{1}{a^2} - \frac{1}{c^2},$$

which is the difference of two squares.

5. The quantities in the brackets stand thus : $(a+b)(a+c)(b+c)(b+a)(c+a)(c+b)$, viz., $(a+b)^2(b+c)^2(c+a)^2$.

6. The difference of the quantities is found to be $2x^3y + 2xy^3 - 2x^2z - 2xy^2z$, viz., $2x(x^2-yz)(y-z)$.

7. $x^3+6x^2c+12xc^2+8c^3 = x^3+6x^2c+8xc^2+10c^3$. The higher powers of x cancel; there results

$$4xc^2 = 2c^3, \text{ or } x = \frac{c}{2}.$$

8. $x = 4\frac{1}{2}$.

9. Clear the equation of fractions. Add twice the first equation to the second; $\therefore 4x-z=60$. Add twice the third equation to the fourth; $\therefore 4z-x=240$. Eliminate x from these equations and z is found to be 68. x is then found to be 32, y 49, u 76.

10. Let $10x+y$ be the number. Then $10y+x = \frac{1}{2}(10x+y)+6$; and $x+y=12$. The number is 84.

Educational Intelligence.

PROPOSED TEACHERS' UNION.

A MEETING of teachers and inspectors was held in the public hall, Normal buildings, Toronto, on the 30th ult., to discuss the formation of a Teachers' Union for the Province. Inspector J. S. Carson, of Strathroy, presided, and Model School Master F. C. Powell, of Kincardine, acted as secretary.

The chairman explained the object of the meeting, and called upon Mr. D. Boyle, of Toronto.

Mr. Boyle said that though not at present engaged in teaching, he was strongly in sympathy with the formation of a union. Properly organized unions would elevate the profession, lead to an improvement in salaries, and prevent the present underbidding so common among teachers. The example of lawyers, doctors and other professional men should be followed by teachers. There was a lack of professional honour among teachers, which could be removed by having a regular code of rules. Mr. Boyle strongly urged immediate action on the part of teachers, and hoped that no teacher would impute improper motives to him for the course he was pursuing respecting teachers' unions.

Mr. C. McPherson, of Prescott, believed Mr. Boyle's course would not be at all unsatisfactory to teachers in general. The formation of a union would lead to great advantages. The formation of a secret organization would be unwise, and would not meet with approval from teachers or trustees.

Mr. Dion C. Sullivan was in favour of immediate action. The practice of many teachers in applying for situations, though not wanting them,

he strongly condemned as unfair and dishonourable.

Mr. C. W. Chadwick, of Stratford, favoured union, and believed a certain amount of secrecy necessary to success. He could not see anything degrading or unworthy of teachers in secret unions.

Mr. McPherson moved, seconded by Inspector E. Scarlett, "That the formation of a Teachers' Union for the Province of Ontario is desirable." The resolution was adopted without any opposition.

Mr. E. Kirk, of Chatham, believed that many difficulties would arise on the formation of a union. There were over 5,000 teachers to satisfy; their interests were varied, and to secure their voluntary co-operation would be a difficult matter.

Mr. McPherson had faith in the principle, and was sure many improvements would follow its adoption. Teachers only should be members of the union.

Mr. R. W. Hicks, of Parkdale, regarded secrecy as quite unnecessary to success.

Mr. John Simpson supported union chiefly on the recommendation of Mr. Boyle. He would oppose union depending on secrecy. Schools are required by law, and the hands of trustees should neither be tied nor forced.

Mr. D. N. Lint, of Richmond Hill high school, regarded the principle of organized union as good and wise. Its adoption would do much toward improving the teacher's condition. The cheap and inexperienced teacher is constantly seeking employment, and displacing men and women of experience and ability. Tabulated statements respecting schools should be compiled for the use of teachers. Statistics respecting the standing and success of teachers should be prepared for trustees. Control of the entrance to the profession should be secured, and increased efficiency required. There should be sufficient brain and business capacity in the profession to formulate a scheme of union and reduce it to practice. Permanency of tenure should be a primary object. The union should be without secrecy, and entirely voluntary and honourable.

Inspector E. Scarlett, of Cobourg, deplored the constant exodus from the profession. Low salaries must be regarded as the chief cause. The salaries now paid are not sufficient to support a family, hence men wishing to settle in life and take up housekeeping are forced to leave the profession. Numerous instances have come under his own notice.

Mr. R. W. Telford, of Walkerton, heard much about the advisability of union, but he feared unions would fail in preventing trustees from advertising, and teachers from applying.

The chairman regarded the formation of unions as surrounded by many difficulties. To secure and control the entrance to the profession he regarded as of vital importance to success. The proper tests were not at present applied with sufficient rigour. The physical test should be required as well as the moral, mental and professional. No doubt many teachers are out of employment, but good, active, energetic teachers can usually get schools. Many teachers do not keep pace with the times, and deserve to be without situations. Teachers should be allowed to leave the profession if they chose. There were too many in the pro-

profession who, Micawber-like, are waiting for something to turn up. Young women sought an outlet in marriage and young men in the professions, and they should not be discouraged in so doing. The information required respecting schools and teachers could be easily supplied by inspectors. The circumstances surrounding the Minister of Education he regarded as such as to materially affect the entrance to the profession. An effort should be made to set the matter right, though it terminated in the appointment of a chief superintendent in place of a Minister of Education.

Mr. J. A. Wismer, of Parkdale, favoured the formation of a union embracing all teachers and inspectors. He suggested the appointing of a committee to prepare a scheme.

THE HEIDELBERG CELEBRATION.

THE visiting deputations to participate in the celebration of the five hundredth anniversary of the foundation of Heidelberg University, gathered in the Festhalle, Heidelberg, on the 3rd inst., and listened to an address of welcome by the burgomaster. There were 5,000 persons present. Vigorous cheers were given for the Emperor William and the Grand Duke of Baden. The Choral Union sang the Jubilee Swan song, the words of which were written by Scheffel, and the music by Achmer, who directed the singing. A hymn by Poet Wolff was also rendered. The deputies representing foreign universities held a meeting, and elected M. Zeller, President of the French Institute, to act as general spokesman for the deputations during festivities.

A SECOND school is to be built in London West. The colleges of the United States contain 18,000 woman students.

OPERATIONS on the extension to the St. Marys collegiate institute have been commenced.

MR. N. J. GREENWOOD, B.A., has been appointed master to the Mitchell High School.

MISS LIZZIE BYFIELD, of Welland, has been appointed third assistant teacher of Goderich High School.

AT the recent fire in Vancouver city, B.C., Mr. T. O. Allen, a former school teacher in Parkhill, lost about \$5,500.

M. W. H. BINGHAM, of Corneville, has been appointed head master of the Ridgetown Public School at a salary of \$500.

PERTH Collegiate Institute has engaged Mr. V. Fowler, B.A., as science master, at a salary of \$500 a year.

THE Minister of Education has decided in the case of Belleville that the municipality cannot add to the school tax to pay costs of collection and remission.

THE science mastership of Guelph Collegiate Institute has been conferred on Mr. Nichol, B.A., tutor in chemistry at Queen's University, Kingston, with a salary of \$500 per annum.

THE Parkhill high school board has made a wise choice in the selection as first assistant of Mr. W. F. May, who has been for some time past the very efficient head master of Granton school.

THE Board of trustees of the Ottawa Collegiate Institute have conferred the appointment of assist-

ant English master on Mr. Alfred Orr, late head master of the Hawkesbury Public School.

AT a meeting of the school trustees at Granton, it was agreed to engage Mr. S. Jones, of Crediton, as principal of Granton school at a salary of \$475, providing he furnished satisfactory testimonials from his last school.

THE classical master of the London Collegiate Institute, Mr. A. L. Langford, B.A., has resigned his position, with the object of proceeding to Leipsic, there to take a classical course.

AT the meeting of the London Board of Education recently it was resolved, by a vote of eight to five, that the services of the music and drawing masters be confined exclusively to the collegiate institute, and that in the public schools these subjects be taught by the regular teachers.

MR. L. E. HORNING, B.A., of the Peterboro' Collegiate Institute, has been appointed to act as adjunct Professor of Modern Languages at Victoria University, Cobourg, during the absence of Mr. A. J. Bell, B.A., who has gone to Germany with the object of studying the classics for two years.

MISS M. E. BALMER, B.A., of Toronto, gold medallist in modern languages, who was recently in Welland visiting friends, has received the appointment of a teacher in the Brantford Young Ladies' College. This young lady obtained her degree after a most brilliant career at the Toronto University. The college is to be congratulated on having a lady with such high qualifications on its staff.

VACANCIES in the Paris Public School, occasioned by the resignation of Miss Alexander and Miss Barclay, have been filled by the appointment of Miss Malcolm, of Brantford, and Miss Inksater. Other changes reported in the same town, are that Miss Campbell is to be promoted to the junior third class in the Central School, and Miss Sarah Spencer to the senior class in the South Ward School.

IT is proposed to hold in the autumn of 1887 an International Congress of Shorthand Writers of all existing systems, and of persons interested in shorthand generally to celebrate conjointly two events of importance—(1) the jubilee of the introduction of Mr. Isaac Pitman's system of phonography, marking as it does an era in the development of shorthand on scientific principles; (2) the tercentenary of modern shorthand, originated by Dr. Timothy Bright about 1587, continued by Peter Bales (1590), John Willis (1602), Edmund Willis (1618), Shelton (1620), Cartwright (1642), Rich (1646), Mason (1672), Gurney (1740), Byrom (1767), Mavor (1780), Taylor (1786), Lewis (1812), and many others in past generations, and finally by Mr. Pitman and other English and Continental authors of the present day.

AT a recent meeting of the Ottawa Separate School Board a letter from Miss Pinard stated she had not passed the examinations, and did not think it worth while to do so, for while she had a class to teach, she had no school-room to put them in. This lady's charge is in St. George's ward. In connexion with this matter the chairman said it had been found very difficult, almost impossible, to get school quarters in St. George's Ward. The action taken by Miss Pinard virtually meant break-

ing up the class. One of the reasons which made the former teacher, Mrs. Dion, abandon the class was want of proper accommodation for it. In consequence of Miss Pinard's resignation some fifty children in the Ward will be without tuition until steps are taken to remedy the existing state of affairs.

AN important meeting of the council Board of Alma College was recently held. Among other business the appointment of teachers was taken into consideration, resulting in the appointment of Miss Pettit as a teacher of the Commercial Department, Miss Adams, of Woodstock, teacher in the Fine Arts Department, Miss Gorman, of Sarnia, in the music Department, and Miss Tenney, of St. Catharines, who holds a first class teacher's Provincial certificate, to the position rendered vacant by the resignation of Miss Brotherhood. Principal Austin proposed the introduction of a course of study for home classes, the classes to be organized by ministers, and the examination upon the course to be conducted by ministers, on papers set by the college council. The proposition was adopted by the Board, and the course of study referred to the Senate for consideration.

Correspondence.

SO-CALLED SPELLING REFORM.

To the Editor of the EDUCATIONAL WEEKLY.

SIR,—All who have the honour of being acquainted with Principal McKay, of Pictou Academy, will read with pleasure your announcement that his valuable contribution to biological science has been recognized in England. You are quite right in describing him as "a most indefatigable worker in the cause of education," and I am glad to say, you are also right in the statement that he is a spelling reformer. Permit me to put before your readers his ingenious and thoroughly philosophical *exposé* of the absurd reasoning by which our present system of spelling is defended. The following excerpt is from Mr. McKay's paper on "English Spelling Reform," read before the Provincial Educational Association of Nova Scotia in 1885:—

"Spell Phthisic," (said our amiable and most conventional teacher, whom we all liked.) Jim, a little cunning rebel, as he was, answers, "T-i-s-i-c."

"No, P-h-i-t-h-i-s-i-c," said the teacher, and the dialogue went on.

"Why do you spell it with a *phth*?"

"To show that it is from the Greek, and means consumption."

"Couldn't we know it to be from the Greek and meant consumption without the *phth*?"

"Perhaps you could, but you would have to turn up the dictionary for it."

"And if you spell it with a *phth* you needn't turn up the dictionary, need you?"

"No, you blockhead, that is to say, if you know Greek, the form of spelling would tell you that it was Greek."

"Do English people generally know Greek before they learn to spell English?"

"Of course not. What a foolish question!"

"Well, why did they make the word so that we have to learn Greek spelling before we learn English spelling?"

"Why, because that is the right way to spell; who ever heard of it being spelled any other way? And when you learn Greek it will strike you with great pleasure to see how simple the spelling and

meaning of *Phthisic* would have been had you only known Greek before you learned to spell."

"Do all English people, then, learn Greek after they learn to spell so as to be struck with this great pleasure?"

"Of course not. But why do you ask?"

"Well—I was only thinking. But how many do learn Greek?"

"Perhaps 20,000, according to the Encyclopædia."

"And how many learn English?"

"About 100,000,000."

"And how many 20,000 are there in 100,000,000?"

"About 5,000, of course. But what of that?"

"Is not that the same as if every one in a town larger than Pictou should be compelled to spend his time in learning English words with Greek spelling, so that *one* boy should have the pleasure of seeing, when he comes to study Greek, that some of the English words he learned were spelled pretty much, though not exactly, like Greek?"

"You had better hold your tongue, Jim. you are a dangerous boy—to dare to question the proper way of spelling words, which I have by dint of careful labour for years become almost perfect in, in which I have attained more excellence than in any other subject. You conceited, radical little scamp!—keep num, and spell *Phthisic*."

Perhaps you will permit me also to ask why the movement, of which both Principal McKay and myself are promoters, should be spoken of as a "so-called spelling reform." You will not deny the possibility of a real reform of our English spelling. We contend that what we advocate would be a real reform, and we have on our side all the great English scholars of the present day on both sides of the Atlantic. Mr. McKay cites, in the paper above quoted from, the names of Prof. Sayce, Prof. Max Müller, W. E. Gladstone, Bishop Thirlwall, Dr. J. H. Gladstone, Jacob Grimm, Lord Lytton, Dr. Morris, Dr. Angus, Dr. Morell, Prof. March, Prof. Husley, Robert Lowe, Prof. Skeat, Sir John Lubbock, Thomas Hughes, Prof. Bain, Dr. Gilman, Dr. Crosby, David Dudley Field, Dr. Porter, Dr. Draper, Prof. Haldeman, Prof. Lounsbury, Prof. Whitney, Prof. Child, Prof. Corson, Oliver Wendell Holmes, Charles Sumner, Benjamin Franklin, Thomas Jefferson, Geo. P. Marsh, and Chief Justice Waite, with a host of others who are hardly less eminent as English scholars, statesmen, men of science, and men of letters. He cites also the "Philological Society of England," and the "American Philological Association," which after years of co-operation elaborated the scheme of spelling reform which we advocate. In France they have an academy which regulates authoritatively all matters relating to the French language and literature. We have no such authority vested in either Great Britain or the United States in any body of men, and I am glad of it, but in the absence of the voice of authority why should we decline to obey that of reason? And why should you call a scheme that has been carefully drawn up by the most eminent English scholars of the day a "so-called spelling reform?" Those who oppose this reform—which is by far the greatest educational movement of our day—will find that their *vis inertia* cannot long withstand the force which is at its back.

Toronto, July 24, 1886.

WM. HUSTON.

THE GOVERNOR-GENERAL'S MEDAL.

To the Editor of the EDUCATIONAL WEEKLY.

SIR,—As many teachers and pupils appear to be ignorant as to whom and on what principles, the Governor-General's medal is awarded, I should be much obliged if you would publish in your valuable paper all the information concerning it that may be interesting to them and the public at large.

I am, Mr. Editor, yours truly,

PETERBOROUGH.

[The lateness of the date at which the foregoing communication reached us preclude the possibility of answering it in this issue.—ED.]

Regulations.

THE NEW DEPARTMENT OF ORIENTAL LANGUAGES IN THE UNIVERSITY OF TORONTO.

THE following is the full text of the recent statute of the Senate of the University of Toronto, creating a Department in Oriental Languages:—

By the Senate of the University of Toronto be it enacted that there be a Department of Oriental Languages, and the following shall be the requirements thereof:

PASS COURSE.

FIRST YEAR.

Essentials of Hebrew Grammar.

Genesis i., ii., iii., xxiv., xxxvii., xlii. Exodus xx., xxxii. Numbers xxiii. 1 Samuel xvii. 2 Samuel xiv.

Translation of easy sentences from English into Hebrew.

Gesenius' Grammar, (Mitchell).

SECOND YEAR.

Grammar continued. Word formation and Syntax more fully treated.

Psalms i., ii., viii., xix., xxiii. 1 Kings v.-viii. 2 Kings xviii., xix. Hosea iv., v. Amos v., vi. Isaiah i.-vi., xiii., xiv.

Translation of easy passages at sight.

Exercises in Hebrew composition.

THIRD YEAR.

Isaiah xl., lii.-lv., lx., lxiii. Jeremiah xxi., xxv. Ezekiel i., ii. Micah v. Nahum iii.

Translation at sight and composition continued.

Hirschfelder's Hebrew Poetry.

Chaldee Grammar: Paradigms in Baer's Text of Daniel and Ezra. Daniel ii., iii.

FOURTH YEAR.

Psalms xlii., xlv., xc., cxxi.-cxxxvii., cxxxix. Proverbs i.-viii., xvi., xxv. Job iii., iv., xix., xxviii. Ecclesiastes xii. Lamentations iii. Nehemiah i., viii.

Exercises continued.

Clause 4 on page 3 of the Arts Curriculum is erased, and Clause 5 on page 4, commencing "In French or German," reads as follows:—

In French, German or Hebrew.—Each Undergraduate must take the Pass French, or the Pass German, or the Pass Hebrew in the First and Second Years respectively.

HONOUR COURSE.

SECOND YEAR.

General introduction to Semitic languages, literature, and history.

Hebrew: Outlines of Hebrew literature. Historical prose:—Exodus xxi.-xxiii. Leviticus xxvi.-Numbers xxi., xxii. Deuteronomy viii. Joshua ix. Judges xiv.-xvi. 1 Samuel xix., xx. 2 Samuel xviii., xix. 1 Kings xvii., xix. 2 Kings iv.-vi., xvii., xviii. 2 Chronicles, xxix., xxx. Ezra i., ii. Nehemiah iv. Esther i. Ruth.

Exercises to illustrate the vocabulary and syntax. Translation at sight.

Aramaic: Introduction to the Aramaic dialects. Targumic: Winer's Grammar by Riggs with Chrestomathy. Syriac: Essentials of the Grammar (Uhlemann translated by Hutchinson, or Phillips). Texts in Roediger's Chrestomathia Syriaca.

THIRD YEAR.

Hebrew: Prophetic literature. Isaiah xxv., xxviii., xxxii., xxxv.: xli.-xlix. Jeremiah xiv.-xvii. Ezekiel xxvi., xxvii., xxxi. Joel ii. Micah vi. Zephaniah iii. Haggai ii. Zechariah iii., iv. Malachi iii., iv.

Exercises in composition especially for the use of the tenses. Translation at sight.

Arabic: Socin's Arabic Grammar with Reading Book and Exercises.

Or, Assyrian: Lyon's Assyrian Manual. DeLitzsch's Assyrische Lesestuecke.

FOURTH YEAR.

Hebrew: Poetical literature: Psalms xviii., xxii., xxxiv., xlii., li., lv., lxxviii., lxxii., lxxviii., lxxii., lxxxvii., xci., ciii., civ., cx., cxxx., cxxxvii., cxlv., cl. Proverbs x., xi., xiv., xv., xxviii.-xxxi. Job xiv., xxiii., xxix., xxx., xxxviii.-xli. Canticles ii., iii. Genesis xlix. Deut. xxxii. Eccles. iii. xi.

Exercises in composition. Translation at sight.

Arabic: Koran Suras i., ii. Texts in Beyrut Chrestomathic, with use of the Beyrut Vocabulaire Arabe-Français.

Or, Assyrian: Cuneiform Inscriptions of Western Asia, selections from vols. i. and v. Haupt's Akkadische and Sumerische Keilschrifttexte, selections from parts ii. and iii.

ADDITIONAL STUDIES.

FIRST YEAR: { Pass Latin and Greek.
—French or German (German recommended).
—Mathematics.
—English.
—Hebrew.

SECOND YEAR: { Pass Latin or Greek.
—Physics.
—History.
—French or German.
—Mental Science and Logic.

THIRD YEAR: { Pass Latin, or Greek, or French, or German.
—English or History.
—Mental Science.

FOURTH YEAR: { Pass Latin, or Greek, or French, or German.

Examination Papers.

PAPERS SET AT THE MATRICULATION EXAMINATION OF THE UNIVERSITY OF LONDON IN JUNE, 1886.

ENGLISH LANGUAGE.

Examiners—HENRY CRAIK, ESQ., LL.D., M.A.;
PROF. JOHN W. HALES, M.A.

[Questions 1, 7, and 15 must be attempted by everyone, and of the rest not more than seven.]

1. Write out and punctuate the passage read by the examiner.
2. What do you know of the origin of our alphabet? Illustrate its imperfections.
3. Classify the consonants. What is meant by a spirant? Which are the oldest vowels?
4. Discuss the pronunciation of *chivalry*, *project*, *humile*, *Deuteronomy*, *dynamiter*, *either*. How do there come to be such different pronunciations of the vowel *a* as are heard in such words as *master*.
5. Classify our words. Show that to some extent the form of a word indicates its class. Why only "to some extent?" To what class or classes belong *that*, *ink*, *after*, *stand*, *parallel*, *good*.
6. State the force or forces of the suffixes: *ster*, *ism*, *let*, *some*, *ard*, *ish*. Mention three prefixes of Teutonic origin and three of Romanic.
7. Describe our two conjugations. Which is the living one. Does any verb belong to both? What traces are there of reduplication?
8. What is the origin of the *d* in the preterite of *love*? What of the *d* in its past participle? Explain the forms *had*, *made*, *left*, *built*, *clad*, *methinks*.
9. When is *dare* inflected in the 3rd sing. pres. ind.? Can you cast any light on the forms *durst*, *wist*, *wrought*, *sold*, *sought*, *ago*?
10. Mention some cognates of *better*, *nether*, *among*, *noun*, *rather*, *toward*.
11. What is the difference in meaning between *monitory* and *monetary*, *definit* and *definitive*, *credible* and *creditabile*, *confident* and *confidant*, *virtuous* and *virtual*, *expedit* and *expeditious*?
12. Point out what is idiomatic in these phrases: "There came a letter." "Let them fight it out." "We spoke to each other." "Many a man would flee." "What an angel of a girl!" "What with this, and what with that, I could not get on."
13. What error has crept into the phrases "ever so many," "to do no more than one can help," "these sort of things"? Suggest some explanations of *mine* in such phrases as "a friend of mine."
14. What is the use of the "analysis of sentences"? What shapes may the subject of a sentence assume? And in what ways may it be extended?
15. Analyse: "I saw them run." "He can make it go." "Let her depart." "Who is it?" "He was crowned king." "He was hanged—a well deserved punishment."

16. Write a sentence containing the extensions of the predicate, one of them a clause, and let this clause contain a subject with two extensions.

Time—three hours.

GEOMETRY.

Examiners—PROF. A. G. GREENHILL, M.A.;
PROF. M. J. M. HILL, M.A.

1. PROVE that the interior angles of any rectilineal triangle are together equal to two right angles.
 2. In any right-angled triangle the square on the side subtending the right angle is equal to the squares on the sides containing the right angle.
 3. Divide a straight line into two parts so that the rectangle contained by the whole and one part shall be equal to the square on the other part. What is the algebraical equivalent of this proposition.
 4. Describe a square equal to a given rectangle.
 5. Prove that the opposite angles of a quadrilateral figure inscribed in a circle are together equal to two right angles.
 6. If two straight lines cut one another, either within or without a given circle, the rectangle of the segments of one of them made by the circle is equal to the rectangle of the segments of the other made by the same circle.
 7. Find the point which is equidistant from three given points.
 8. Inscribe a regular hexagon in a given circle; and show how to describe a series of equal regular hexagons forming a tessellated pavement.
 9. Prove that the middle points of the sides of any quadrilateral are the angular points of a parallelogram.
 10. Determine the points equidistant from a given straight line and two given points.
- Time—three hours.

GALT COLLEGIATE INSTITUTE

Will re-open on Monday, August 30th. Special attention given to the preparation of candidates for their Third, Second and First Class Examinations, and for Junior Matriculation with Honors in all departments. The School has a Literary Society, Football and Cricket Clubs, beautiful grounds, a well-equipped Gymnasium, and Drill and Callisthenics are taught. Board for \$2.75 a week and upwards.

For Catalogue apply to
THOS. CARSCADDEN, M.A.,
Principal.

BUSINESS TRAINING.

DAY'S BUSINESS COLLEGE,

Near Rossin House.

References to former students and reliable business men.

Terms, address,

Jas. E. Day, Accountant, Toronto.

School Teachers, Ministers & Lady Agents

FROM ALL OVER THE COUNTRY

Pour in daily reports of the greatest and most flattering success of our agents. Reader, go to work at the best business your attention was ever called to, and in a short time earn more than ten dollars per day. Send for particulars and Illustrated Catalogue, mailed free. THE ONTARIO TEA CORPORATION, 125 Bay Street, Toronto.

JUST ISSUED—PRICE 75 CENTS.

ALGEBRA MADE EASY.

From the A. B. C. of the subject to University Matriculation, by

J. A. McLELLAN, M.A., LL.D.,

Director of Normal Schools and Teachers' Institutes for Ontario.

Essentially a pupil's book that meets all the difficulties of Official Examinations. Contains over

500 SOLVED EXAMPLES

AND

5,000 EXERCISES.

For mental and written work on every variety of Algebraic problems.

ADDRESS,

Canada Publishing Co.,
26 Front St. W., TORONTO.

P.S.—A large stock of "McLellan's Teachers' Hand Book of Algebra," published by Gage & Co., and formerly sold at \$1.25, reduced to 25c., by mail, post paid.

JUST PUBLISHED.

The High School Algebra.

A work by Canadian Authors for the use of Canadian Schools.

CONTAINING full and clear treatment of ordinary Algebraic work, with much new matter, especially designed to meet the peculiar difficulties of Canadian Examinations, by

W. J. ROBERTSON, B.A., LL.B.,

Mathematical Master Collegiate Institute, St. Catharines, and

I. J. BIRCHARD, M.A.; Ph.D.,

Mathematical Master, Collegiate Institute, Brantford.

Price, \$1.00.

This book contains the answers to the Problems. No extra book needed.

Send for descriptive circular.

WILLIAM BRIGGS, PUBLISHER,

73 & So King St. East, Toronto.

ORDER YOUR BOOKS (NEW OR SECOND-hand) from DAVID BOYLE, 353 Yonge Street, Toronto.

SPECIAL OFFER.

Students' Shakespeare, 12 vols., flexible, reduced to \$8 00
Green's History of England, 4 large vols. 4 00
History of Our Own Times, 2 vols., by Justin McCarthy, 2 25
History of England, Macaulay, 5 vols., 2 50
All kinds of second-hand books taken in exchange. Send lists, as we require a large number at once. Any book sent free on receipt of price.

LIBRARY ASSOCIATION,

DRAWER 2674, TORONTO.

W. STAHLSCHMIDT & CO., PRESTON, ONTARIO,
Manufacturers of Office, School, Church, and
Lodge Furniture.



THE "MARVEL" SCHOOL DESK,

PATENTED JANUARY 14TH, 1886.

Send for Circulars and Price Lists. Name this paper.

The Bennett Furnishing Co.,

LONDON, CAN., GLASGOW, SCOTLAND.



MANUFACTURERS OF

SCHOOL, CHURCH, OFFICE

AND ART FURNITURE.

Send for Illustrated Catalogue and Price List of our School
Furniture. Over 30,000 of our Bennett Desks now in use.
They have no equal for convenience, comfort and strength.

THE BENNETT FURNISHING CO.,

LONDON, ONT.

FINE WOOD MANTELS A SPECIALTY. SEND FOR
SPECIAL CIRCULAR.

SPECIAL OFFERS!

We will send the Educational Weekly three
months, and the New Arithmetic, postpaid,
for \$1.00.

We will send the Educational Weekly four
months, and Williams' Composition and Practi-
cal English, postpaid, for \$1.00.

We will send the Educational Weekly one year,
and Williams' Composition and Practical Eng-
lish, postpaid, for \$2.10.

We will send the Educational Weekly three
months, and Ayres' Verbalist and Orthoepist,
postpaid, for \$1.00.

We will send the Educational Weekly one year,
and Ayres' Verbalist and Orthoepist, postpaid,
for \$2.25.

We will send the Educational Weekly one year
and Stormonth's Dictionary (Full Sheep), for
\$7.50.

We will send the Educational Weekly one year,
and Worcester's Dictionary (Full Sheep), for
\$9.50.

We will send the Educational Weekly one year,
and Webster's Dictionary (Full Sheep), for
\$11.50.

We will send the Educational Weekly one year,
and Lippincott's Gazetteer (Full Sheep), for
\$11.50.

Address—

EDUCATIONAL WEEKLY,

GRIP OFFICE, TORONTO.

Warwick & Sons' Canadian Series of School Books.

Extracts from reports of Inspectors of Collegiate Institutes and High Schools, to the Hon. the Minister of Education,

1884: "One of the greatest drawbacks to the educational value of the study of the prescribed English texts, is the use by pupils of the profusely annotated editions with which the schools are flooded. In the hands of the pupils they are disadvantageous, as they rid him of the which some necessity of interpreting for himself, and consequently imbue him with the fallacious idea that the notes are of more importance than the text. There is a possible avenging Nemesis, however, in the fact that the examinee, in preparing his paper, studiously avoid coming in contact with the notes."—*J. E. Hodgson, Esq., M.A.; page 151.*

"On the principal that nothing should be told the pupil which he can find out for himself, the literature selections would be better without notes, certainly without the vicious and costly padding which is heralded by enterprising publishers as containing everything that is necessary to pass the examinations."—*J. Seath, Esq., B.A.; page 152.*

Unannotated Edition of the English Literature for 1887.

THOMSON'S SEASONS.

For University Matriculations and Second and Third Class Teachers' Examinations.
Paper Cover, Crown Octavo, 168 pages; heavy calendared paper; blank leaves at end and ample margin on every page for student's own notes.

SOUTHBY'S LIFE OF NELSON.

Cheap Edition, price only 25 Cents.

N.B.—In preparing the text of the "Seasons," the editor has aimed at reproducing closely the latest edition published in the author's lifetime, with a view to giving the genuine form in which the poems appeared after the author's own latest revision. This is of great importance as several corrupt editions have been issued from time to time.

To the prescribed portion of "The Life of Nelson" a summary is attached, in order that the pupil may read the text intelligently, and the book is self-contained for class purposes. A carefully compiled Chronological Table has been added showing the relation between the more important events in the personal career of Nelson and the course of general contemporary history. The great advantage of such collateral information is obvious to every teacher.

The few notes that appear in the work are chiefly by the authors themselves, being considered necessary in explanation of the text.

PHYSICAL CULTURE.

First Book of Exercises in Drill, Calisthenics and Gymnastics, for use in Colleges and Schools in Canada, by E. B. Houghton, late Teacher of Gymnastics and Calisthenics in the High School, Chatham, Ontario.
Crown Octavo, toned paper, 280 pages; handsomely bound in cloth. Price, 50 cents.
Authorized by the Hon. the Minister of Education.

The book is divided into Part I. for Boys, and Part II. for Girls, each part comprising Drill, Calisthenics and Gymnastics. With the exception of the "Drill" (which is a reprint of "Queen's Regulations," the word "pupils" being substituted for "soldiers," and a few other verbal changes and adaptations made), the chapters are original and contain such features as Time Table for Summer and Winter Exercises; Description and Furniture of Gymnasium; Fitting Apartment for Gymnasium in Public School; Engravings and Diagrams illustrative of the Exercises, &c., &c.

BALDWIN'S ART OF SCHOOL MANAGEMENT.

New Edition specially revised for Canadian Teachers, by R. Dawson, B.A., Head Master of Weston High School.
Printed from New Type on Toned Paper; Cloth, Crown Octavo, Price 75 Cents. Recommended by the Hon. the Minister of Education for Teachers in Training and Teachers' Course of Study.

The portions of this book which were found to be unsuited to Canadian schools have been eliminated and a few necessary changes made in the text. The book is now in better shape for the use of Canadian Teachers and, being published at one-half the price of the old edition, is within reach of every grade of the teaching profession.

Warwick & Sons, 8 and 10 Wellington Street East, TORONTO.



For Consumption, Asthma, Bronchitis, Dyspepsia, Catarrh, Headache, Debility, Rheumatism, Neuralgia, and all Chronic and Nervous Disorders.

Canadian Depository:

E. W. D. KING, 58 CHURCH STREET,
Toronto, Ont.

COUNTER
CHECK BOOKS

THESE valuable contrivances are acknowledged to be necessary to the proper carrying on of any retail business. They economize time, and prevent confusion and loss; and they secure a statement of the items of a purchase for both the merchant and the customer. They are, thus, valuable for all selling and book-keeping purposes.

PRINTING
AND
PUBLISHING COMPANY

Make a Special Branch of this Business.

SEND FOR SAMPLES AND QUOTATIONS.

26 and 28 Front Street West, Toronto.

DR. G. STERLING RYERSON

Eye, Ear, Throat and Nose Diseases.

317 CHURCH ST., - - - TORONTO.

CIRCULAR TO PUBLIC SCHOOL INSPECTORS.

EDUCATION DEPARTMENT, ONTARIO,
TORONTO, May 1st, 1886.

SIR,—The Drawing Classes conducted at the Education Department, Toronto, during the last two summers will not be continued during the current year. It is nevertheless desirable in order still further to qualify teachers in this subject, that facilities of some kind should be offered for their self-improvement. Instead of the classes formerly taught at the Department it is now proposed to give a grant to each Inspectoral Division in which a class is formed for instruction in elementary drawing.

The conditions on which such classes may be formed are:—

1. The class must consist of at least ten persons holding a Public School Teacher's Certificate.
2. The teacher in charge must possess a legal certificate to teach drawing; or be approved of by the Education Department.
3. At least 30 lessons of two hours each must be given.
4. Teachers who attend this course will be allowed to write at the Departmental Examination in Drawing in April, 1887.
5. The Primary Drawing Course only shall be taught.
6. A grant of \$20 will be made for each class of ten pupils but only one class will be paid for in any Inspectoral Division.

Will you be good enough to inform the teachers of your Inspectorate of these proposals in order that they may make the necessary arrangements for organizing classes.

Yours truly,

GEO. W. ROSS,
Minister of Education.