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* Editorial Notes. *

MR. WILKINS' paper on "Physical Geography in the High School," abounds in valuable hints and suggestions and will be read with interest by Public as well as by High School masters. We regret that owing to the length of the paper we are unable to give in this number the copious notes in which Mr. Wilkins has explained and defended such of his statements as seemed to require elaboration or proof. One note in particular deals with the strong statement made in the first sentence of his article, and corroborates it with many facts of experience. This note at least, and if possible the others, we will give in next number, not only as a matter of justice to the writer, but because they cannot fail to be useful to our readers, especially to all teachers of the important subject of geography.

Grip, in a recent number forecasts as follows some of the results of the forthcoming invasion of Toronto by the members of the American National Teachers' Association next summer. We shall probably survive :

From ten thousand to fifteen thousand pedagogues and pedagogueses, with their friends, are expected to visit Toronto from the United States next July. Let us draw it mild, and take the lower estimate. This means that the people of Canada will become acquainted with ten thousand intelligent American citizens ; and as each intelligent American citizen will become

acquainted with at least ten equally intelligent Canadian citizens, the intelligent American citizens will form terms of intimacy with one hundred thousand intelligent Canadian citizens, thus, as usual, getting the start of us by about ninety per cent. How long are we, the intelligent citizens of Canada, prepared to stand this sort of thing ? Just think of it a little in detail. It is as certain as anything can be that a good deal of stealing will be going on—stealing, not stealing, of hearts. Inevitably, nuptialities must follow. Canadian homes will be broken up, and the mischief of it will consist in the fact that the homes will rather enjoy the process. Again, this meeting will establish an increased international correspondence, the result of which no man can estimate. If every Yank—American, we mean—should write only twice a year to his Canadian friends, that will mean two hundred thousand epistles from a hostile nation to breathe pestilential republicanism into our pure political atmosphere. Perish the thought ! Then, too, we shall have an equal number of missives from Canadians in return, at a cost in postage alone of \$6,000, the cost to the Americans being only \$4,000, as they pay but two cents, while we pay three—here again the Americans are ahead !

WE have much pleasure in complying with the request of Mr. H. J. Hill, the efficient Secretary of the Local Executive Committee appointed to make arrangements for the great International Educational Association next summer, by publishing the following notice. We hope that a very large number of our readers will make their arrangements to attend this great meeting. It is refreshing to know that the interchange of educational thought at least, need not be hampered by national boundaries or high tariffs.

NATIONAL EDUCATIONAL ASSOCIATION ANNUAL CONVENTION.

The annual Convention of the National Educational Association of the United States, for the present year, will be held at Toronto, from the 14th to the 17th of July next, and a Local Committee has been appointed at Toronto to make all the necessary arrangements. At least twelve thousand teachers of Public Schools, Collegiate Institutes, High Schools, Universities and School Inspectors, throughout the United States and Canada are expected to attend the Convention, and a large amount of work has to be done preliminary to the meeting to make arrangements for the accommodation of this large number of visitors. Cheap railway rates have been secured from all parts of Canada and the United States. An official bulletin will be

issued about the middle of March, giving a full programme of the proceedings at the Convention, officers of the Association, railway arrangements, etc., and will be forwarded to anyone desiring a copy on their dropping a post card to the Secretary of the Local Committee, Mr. H. J. Hill, at Toronto, or Mr. J. L. Hughes, Chairman of the Executive Committee, Toronto. The most complete arrangements will be made to give the visiting teachers a splendid welcome and to make the meeting a great success. Local excursions are being arranged to all important points of interest surrounding the place of meeting. The meeting will be of an international character, and as it is the first time the Association has ever met in Canada, it is hoped that the Canadian teachers will attend in large numbers to take part in the proceedings.

WE are glad to see that the Minister of Agriculture has complied with the request of the Ontario Teachers' Association, at its last annual meeting, by publishing the excellent address on "Agriculture in Public Schools," delivered by Mr. J. E. Bryant, M.A., on that occasion. We have had this address before us for some time hoping to give it to our readers through the JOURNAL, but have been unable hitherto to do so, on account of its length. Now it is accessible in a neat pamphlet form, and may, no doubt, be had for the asking from the Department of Agriculture. We hope Minister Dryden will see that every Public-school teacher in the Province receives a copy without asking, for it is a paper which teachers in particular should read. Our space will not admit of an extended notice, but we may just say that Mr. Bryant pursues a strictly logical method in his argument for the teaching of agriculture in the schools. He commences by pointing out that one or more of three distinct aims governs all educators in their choice of the subjects of School-room study. In order to establish the claim of any subject to be so used, it must be shown to be adapted either to a disciplinary, an æsthetic (including ethical), or a practical or utilitarian end. Those subjects are undoubtedly best which combine all three ends, as indeed most subjects do, and as he proceeds to show that agriculture does, though in varying proportions. Few will, we believe, read the address without becoming convinced, if they were not convinced before, that it is in the highest degree appropriate and desirable that, in a Province which is eminently agricultural, Agriculture should be made a prominent subject of study in the public schools.

* Special Papers. *

* PHYSICAL GEOGRAPHY IN THE HIGH SCHOOL.

BY D. F. H. WILKINS, B.A., BAC. APP. SCI., HEAD MASTER, HIGH SCHOOL BEAMSVILLE.

OF all the subjects prescribed for study in our schools there is probably none which more emphatically deserves the epithet "mistaught" than that of geography. Too often geography is assumed to be a mere memory-subject; a stuffing in of a cart-load of names with here and there a map or two—the whole an unpractical, useless burden, to be dropped as soon as that awful spectre, "the examination," has been successfully encountered. In both High and Public Schools it is only too often assumed that there is to be a huge gap between that knowledge of the earth's surface which is derived from school-book and school-room, and that knowledge of the same surface which is derived from practical acquaintance with the great world itself. At the same time it is also somewhat inconsistently assumed that the principal objects to be gained by the study of geography are the acquisition of a vast amount of *practical* information, the picturing to the mind's eye of the beautiful and sublime features of the earth's surface as they really exist, and the relations of those features which are unseen and unknown personally to us, to those of our own locality, those with which we are familiar.

What is true of the subject of geography in general is doubly true of that most fascinating and useful sub-division known as physical geography. In the High School only too often is physical geography regarded as a most unwelcome appendage to the general subject, neither flesh nor fowl nor fish—a something to be hurried over as rapidly as possible without note or comment. The physical phenomena with all their varied effects, climate, flora, fauna, laws governing these, laws influencing the development of mankind, laws far-reaching in their almost awful consequences—all these fitted eminently to train both intellect and emotion, are simply dashed through or slurred over. The chief of English prose writers may point out how greatly the pine forests and the far-stretching ocean of the North have affected the development of Anglo-Saxon and Scandinavian character when he says of our ancestors that "they dwelt amid the forests as they wandered on the waves, and saw no end nor any other horizon:—still the dark-green trees or the dark-green waters jagged the dawn with their fringe or their foam. And whatever elements of imagination or of domestic justice were brought by the Norwegian and the Goth against the dissoluteness or the degradation of the south of Europe, were taught them under the green roofs and the wild penitentialia of the pine." Another writer, referring to ancient Greece, has said: "No land known to the ancients, perhaps I might say no land ever known to man, has supplied such visible stimulus to the imagination as Greece; scenery so richly diver-

sified, a land beyond all others various in features and in elements, mountains with their bases plunged into the sea, valleys intersected by great rivers, rich plains and meadows inlaid between the hill-ranges, deeply-indented shores, promontories wood-clad or temple-crowned, looking out on the many-islanded Ægean—around it on every side seas so beautiful, above it such a canopy of sky, changing through every hour and every season, and calling forth from sea and land every color which sunlight and gloom exhibit." Hundreds of passages of similar import, both in poetry and in prose, might be quoted to show how inextricably interwoven physical geography is with the destiny of our race. And yet, in only too many instances, this valuable and useful subject is hustled off the scene as rapidly as possible in order to make room for some so-called practical and useful study.

There seem to be two reasons for this somewhat scurvy treatment of our subject, one of which is the small number of marks assigned at the examinations. No matter how interesting, how profitable, how useful a study may be, students, as a rule, persist in regarding it solely from an examination standpoint; so far, too, as culture and development of mind are concerned, the average pupil cares but little. Faith in his own powers and faculties being boundless, he needs neither culture nor training, except such as will enable him "to pass"; and, with this low ideal before him, and a small number of marks being awarded in our subject, he is only too ready to acquire as little knowledge as he can, and to acquire that in a crude, raw state.

A second reason is that physical geography is regarded as a stepping-stone to general geography and this again as a subordinate subject to history. Following out this idea, these two branches fall to one and the same teacher, who is generally an honor graduate either in modern languages or in classics. Now that the modern languages, classics and history are ably handled, and that scholarly men and successful teachers have charge of them and do their duty by these subjects, require no words of the writer to establish or to confirm. Ay, more, that the inductive method of teaching is used by all, or by nearly all, is a statement in which the writer heartily and cheerfully concurs. But the question arises whether it be fair and just to the teacher of history and of modern languages or of classics, to be put in charge of what is as purely a branch of natural science as is physics or botany. Is it doing him and his work justice to take him out of his own special sphere and put him into another and a wholly different one, merely to carry out what seems to the writer, at least, a prejudice? Is it not as unjust to him as it would be to insist on the science master teaching some one language *willy-nilly*? Is it not almost as unfair to the pupils as the villainous plan adopted in some of the American schools of changing the masters' subjects annually or biennially? To return to the reason, physical geography is thought to be subordinate or rather preparatory to general geography which in its turn is to be a preparatory subject to his-

tory—a study which deals with men rather than with things, which, therefore, touches us more closely and is somehow regarded as more reputable than the knowledge of the earth itself.

Now, to the present writer it seems that this is not a true view, unless we consider physical geography to be a matter of mere definition rather than of laws and of causes. But, as Bain has well said: "Physical geography introduces considerations of cause and effect into geographical facts by selecting and stating in empirical form the principles methodically taught in the regular and fundamental sciences. A course of physical geography is subsequent and supplementary to proper geography while reacting upon it in the way that causation operates upon the knowledge of facts." True, Fitch, in his valuable lectures, takes a quite different view, the one indeed generally adopted. But Fitch is addressing those who are the equivalents of our Public school teachers, rather those engaged in secondary education. The subject of physical geography should be given to the science master, because it has to do with the characters of rock masses and of the soils derived from these, the formation of rock and stone, the laws seen in the direction of our continents and islands, the mountain, plateau and plain regions, prevalent winds, their causes and effects, and many other like matters, especially the all-important ocean currents. It is unfair and unjust to subordinate these to the laws and facts of human history, while it is indispensable for the teacher of history to show the bearing of natural phenomena upon the development of different branches of our race. This, then, is what should be done—to repeat *ad nauseam*. Physical geography should be taught by the science master not, however, as a "science option," but as a compulsory subject for all; while political geography and history might remain as they are. It would seem, too, that 100 marks might be given for the former subject and 100 for the two latter on one paper, as at present. These things premised, a few words are now necessary regarding the text-book, prior to developing at some length the method of study to be adopted.

Concerning the High school geography, while there is much that is excellent, both in matter and arrangement, it has been the present writer's experience that there are some grave faults in its make-up. The student is plunged into the table of geological formations almost before he knows how rocks are formed. After the salient features of the past have been alluded to we have a return to Denudation—a step in the formation of rocks which might well precede the historical treatment of geology. In the geologic record itself the relations of the Laurentian to the Huronian series, the entire omission of the Montalban or the Terranovan series, the mutual relations of the Cambrian and the Silurian series, the division of the last mentioned into three—are, if not positively misleading, at least questionable. Perhaps, too, the Glacial theory at a time when its foundations are being, if not overthrown, at least badly shaken, receives too much attention. The present writer would, however, recommend

* Read before the Annual Meeting of the Science Association held in Toronto, December, 1890.

no new book and even no other book; least of all must it be imagined that he is on the scent for some new, as yet un-made-to-order, work. He would rather recommend that the present book be utilized as a book of reference, that is, so far as physical geography is concerned.

The method which the writer would adopt is somewhat similar to that of Professor Huxley in his admirable *Physiography*. The first lesson should be an open-air one, an excursion to discover the more important features of the district. Here at once there will be a divergence. For example, in the county in which the writer is now located, the Niagara escarpment, intersected by numerous creeks and streams, the plain below, and the Lake Ontario, are the salient points of interest. Commencing with the land, the students would be at once asked the reason for the difference of level between the plain on the escarpment and that below. By comparison of a fragment of hard Niagara dolomite *in situ* above with a fragment of soft Medina shale *in situ* below, and calling attention to "weathering" of rocks, keeping the term out of sight, the difference in hardness operating through untold centuries would occur to the pupils at once as a sufficient cause for the difference in level. This done and fully understood, the four stages in the formation of rocks—decomposition, denudation and transportation, deposition and hardening—can be followed out by observation and inference, *the terms being carefully kept back till their necessity is obvious*. After this had been made plain, specimens of limestone, argillaceous shale, sandstone, coal, etc., would be compared, and a classification made, stratification lines having been noted previously so as to get the point of agreement in the specimens, and hence to derive the definition of sedimentary. Instructive experiments, too, should be given, one of which would comprise the stirring up of a quantity of sand, mud, etc., in water and allowing it to stand, the vessel used being a large one of glass. Another experiment is the well-known one of showing how water containing carbon di-oxide dissolves calcium carbonate. Following the outline of the sedimentary rock would come the inference derived from the study of metamorphic boulders, that all rocks are not purely aqueous in origin, and then would follow an examination and classification of igneo-metamorphic rocks. Specimens of volcanic rock follow and some of purely igneous origin should, if possible, be shown. The facts of superposition, difference of mineral character, and of fossils, having been noticed by the students, the way is paved for "the geologic record," which should be but lightly touched upon. Then will follow the distribution of the geologic formations, and thence the direction of the continental margins, the distribution of mountain chains, island masses, laws of continents, etc. River basins, deltas, lake basins, etc., would follow, for which the district would again be laid under contribution. There should, it may be added, be a collection of the more important rocks and fossils, made as far as possible by the students themselves. From the consideration of inland waters one would pass naturally to the sea, the air, laws of climate, distribution

of animal and of plant life. Such topics as the action of bodies of water in moderating excessive climates, ocean currents, as heat-carriers, the formation of clouds, the effect of pressure upon the boiling-point of water, the effect of evaporation when heat is not directly applied—and many others should be preceded by simple experiments from which the inference must be drawn by the students themselves. In connection with this the writer would strenuously advise that all schools be provided with a chart of "Nature in Ascending Regions," and "Nature in All Climates from the Equator to the Poles," two valuable helps to the study of our science.

A word or two may now be necessary regarding the mode of procedure to be adopted in the case of our school, located on or near one of our larger streams, yet inland from our great lakes. Here the first topic should be the river-basin itself, traced to its source, and to its mouth by a series of excursions. The character of the country through which the river flows; why certain parts are hilly and others level; the cause of the presence or the absence of rocks; the cause of the river-basin itself, would naturally follow, thus introducing the formation of rock in general. The remaining topics follow in the order described in the preceding paragraph and need not be repeated here.

It now remains to briefly indicate the educational value of our study. In the first place there is no better way of cultivating a regard for the beautiful and the sublime in nature than by using the scenery as a text in the study of physical geography; and that teacher who does not point out the beauties of the landscape is doing only half his duty to his subject.

When the poet, Cowper, could write, concerning the flat landscape of the east of England—

"I saw the fields and woods at close of day,
A variegated show; the meadows green
Though faded; and the lands where lately waved
The golden harvest, of a mellow brown,
Uprturned so lately, by the forceful share.
I saw far off the weedy fallows smile
With verdure not unprofitable, grazed
By flocks, fast feeding, and selecting each
His favorite herb; while all the leafless groves
That skirt the horizon wore a sable hue,
Scarce noted in the kindred dusk of eve."

When another, a prose writer, would say of a monotonous landscape of our own Province: "A long stretch of now leafless woodland, of oak, of elm, of maple, of hickory and of walnut, reaching off to the northern horizon; here houses and farms, there the vista of a railway, so level, so flat, that marble after marble might be rolled indifferently either north or south; here clearings, there natural meadow, a slight covering of snow upon all; all this lay before, behind and around me under the pale blue winter's sky, under the gold-red setting sun." When even so-called tame, flat landscapes can awaken a perception of the beautiful, why should not such perception be awakened and cultivated in the pupils of our High Schools by inducing them to see for themselves the hundred-thousand nature-painted pictures around us?

But there is another reason, one which

will perhaps seem of more value to those who are so imperfectly educated as to consider the contemplation of beautiful scenery as mere frothy sentiment. It is this: If there be one faculty *par excellence* in which our pupils are deficient, it is observation. The writer's experience is that nine-tenths of our pupils go through the world with their eyes shut, not only to the beautiful, but even the useful in nature. Over and over again has he questioned pupils of intelligence regarding some of the more commonly occurring phenomena only to be answered that they had noticed nothing. For example, the phenomenon known as "the frost coming out" of a cold building on the sides which face the warm south wind and not on the others; and the kindred phenomenon of ice-crystals on twigs and branches of cold trees, likewise on the sides facing the warm south wind, he has uniformly found almost unnoticed, or if noticed, immediately forgotten. On this ground alone physical geography being a science of observation, should be carefully studied after the manner indicated above.

But, further, since physical geography is the only *compulsory* branch of Natural Science, the training of the reason to properly generalize from a great many particulars is another educational advantage not to be ignored. It is true that the wise teacher in *any* subject uses as far as possible the inductive method; but it is also true that the other subjects have to do with man more than with nature, thus leaving physical geography as the only branch of study open to all High School pupils in which we can reason from Natural Phenomena to Natural Law. Here only do we learn to compare the unknown with the known, to realize, however imperfectly, the mighty stretches of our world as they are actually related to one's own home. We are infallibly brought to see that the same force that shapes the wayside rill excavates the mighty river; that the same cause, which under the exhausted receiver freezes the water in the watch-glass, wraps the mountain-summit in eternal snow; that the same cause, which in a hot room bedews the outer surface of a glass of ice-water, makes the masses of cloud hang upon the mountain-side leaving its top bathed in sunshine and which gives to the seaside of a mountain range welcome showers, leaving the land-side bare and barren of life. Yet these are but a few of the instances in which our knowledge of common things leads us to the solution of problems sublime and apparently mysterious; problems affecting the welfare of mankind; problems demonstrating the universality of Natural Law.

Finally, the writer would suggest that by the study of physical geography, as indeed of all the other inductive sciences, we are led to recognize in the beautiful and the sublime, proofs of Order and Law Divine. In the very correlation of beauty and use, in the fact that earth's enjoyable scenery is the result of cold, hard, matter-of-fact law, we find something of that wonderful adaptation and design so conspicuous in all nature. As the present writer has elsewhere remarked, "Many a one here present has perhaps wandered down by the river side, along the ocean shore, or by the margin of

one of our inland lakes in the hush of eventide, feeling an inexpressible calm. Many a one has gazed enraptured from some mountain-summit upon the panorama of hill and dale, plain and ocean, forest and stream, conscious of joy too deep for words. Many a one has rambled through grand old woods in the bright days of spring, or in the clear, cool days of autumn, 'mid crimson and golden leaved trees and shrubs, under the clear blue sky and the golden sun. Many a one has watched the clouds in their aerial flight, or has followed almost reverently, in the silent night, the grand march of "the host of heaven." Yet exalting and ennobling as is the effect produced on the mind by these phenomena, how greatly is this effect enhanced when to this we add the conceptions of unity in diversity, law and order, harmony of proportions, typical forms and special ends, intelligence, final cause, a plan divinely instituted and ordained, stretching from the immeasurable Past, onward through the ages to the immeasurable Future? Yet these are some of the results of the study of Physical Geography.

* Mathematics. *

All communications intended for this department should be sent before the 20th of each month to C. Clarkson, B.A., Seaforth, Ont.

THE SEQUENCE OF EUCLID.

A REJOINDER BY PROFESSOR DUPUIS.

[To the Mathematical Editor of THE EDUCATIONAL JOURNAL.]

DEAR SIR,—I crave a portion of your space to make some remarks anent a criticism of my Geometry by an unknown writer from Alberta, N.W.T.

In regard to the book itself I may mention that it has been fully and favorably reviewed in the country in which it was published, and that one of the ablest of the British reviews has seen fit to say of the book that "it is a good work and leads the pupil up by a course of sound teaching, so as to enable him to attack with success the subject of modern analytical geometry."

I have, moreover, received numerous commendations of the work, one from so distant a point as Christiana in Sweden.

This new critic, however, holds a different opinion, and seems to see nothing except through Euclidian spectacles. He says the work is inferior to Euclid, and apparently fears that there is some danger of its replacing Euclid in the schools. To quiet his fears I may say that I did not write the work for the schools but for my own classes, and for such other higher institutions as might see fit to use it, for a good portion of the work lies beyond any point ever reached in the schools.

Moreover, I have not approached the Minister of Education upon the subject, nor do I intend to do so. If that Honorable gentleman or his colleagues should see fit to sanction officially the use of the book or of any part of it in any of the schools, I should feel glad, especially for the sake of the publishers; and I am certain that it would not injure any boy to become acquainted with a portion, or all of its matter. I never claimed perfection for the work, but this I know, that it is not more imperfect than Euclid, that it proceeds along more logical lines, and that it leads up to a plane of geometrical thought higher than could ever be reached by the study of Euclid alone.

And now for the critic. His whole criticism evidences such complete ignorance of modern geometrical ideas that it is not worth replying to in detail. He misses the verbosity and circumlocution of his ideal, and hence the work is to him a "burlesque on logic." Possibly it is upon his logic. He repeats the statement of Geometrical Continuity but fails to grasp the idea, and then, instead of interpreting 106° in the light of the definitions and

explanations of 105°, he uses his own very insufficient light, and "fancies that there are other limiting conditions." Surely *fancy* is the word which best suits his case.

He complains that props. 9, 10, 11, 12, of Euc. Bk. 1, are not to be found in the book. Did he suppose that the book was another of the innumerable editions of Euclid? Why did he not read the preface? These problems are found, where they properly belong, in the Constructive Geometry of section 6, and not sandwiched in among the theorems of Descriptive Geometry. Then he says that I have "simplified the second Book of Euclid by abolishing it."

Would it not be humorous to see a work, which professedly aims at establishing geometric relations along the lines of the symbolism of modern Algebra, adopt the cumbersome and effete geometric Algebra of 2,000 years ago? Possibly, our critic does not know that the fifth, and nearly the whole of the second book of Euclid are Algebra. But he says, "every school-boy knows that geometrical relations cannot be expressed by Algebra." Shade of Des Cartes! Has the man never heard of Trilinears or Quaternions? Or is he ignorant of what Algebra really is? I am of opinion that every Algebraic relation, which admits of a geometric interpretation (see sect. 3, part II.) expresses a geometric relation; and I hold this opinion in common with all the great mathematicians of the world, except this critic and his boys.

I would advise our critic to read Prof. Henrici's opinions, or those of Prof. Cayley, the most conservative of mathematicians in the most conservative of countries, or better still the opening chapters of Boole's *Laws of Thought*.

Again, if he had studied 152° with the purpose of understanding it instead of misconstruing it, he might have got some ideas and saved himself the trouble of criticising a method, which, in a slightly changed form, is due to one of the greatest geometers of the present century.

There are two real difficulties in geometry: one in the doctrine of parallels, where we have to make assumptions about space and try to connect things which have no real connection in thought; the other in proportion, where we endeavor to connect magnitude with numerical quantity. Euclid takes the easy way of bridging both of these by *assumptions*; the first being his celebrated 12th axiom, which is now discarded by almost every one, except possibly our critic, and the second his Def. 5 of the fifth book, which no doubt our critic believes to be perfection itself. Now Dr. Casey is acknowledged to be one of the best geometers in Britain, and this is what he says: "Every proposition in the theory of ratio and proportion is true for all descriptions of magnitude. Hence it follows that the proper treatment is Algebraic." Again, "Def. v. is only a test of proportion, and one which, instead of being taken for granted, requires proof." Again, "Defs. vi. and viii. are definitions of proportion." Turning to Def. vi. we find—"Magnitudes which have the same ratios are called proportionals." Lastly, turning to Def. iii., which defines *ratio*, Dr. Casey says, "it has the fault of conveying no precise meaning, being, in fact, unintelligible."

Now, apart from this, it is not difficult to show that Def. v. is *not even a test of proportion* unless we are prepared to go to the limit by taking infinite multiples; and, in common with nearly all writers on modern geometry, I hold that it is simpler and more comprehensible to go to the limit in the direction of the infinitesimal, than to go to limit in the direction of the infinite.

One might then be inclined to ask why Dr. Casey wrote a "Euclid"? Any one who has witnessed the almost fruitless results of the continued efforts of 300 of the prominent teachers of England to get some improvement in geometrical teaching in their own country, will scarcely ask the question. Dr. Casey was wiser in his day and generation than I was. He wrote for Great Britain, and he knew the strength of its prejudiced conservatism; but I thought that in a young and growing country there might be some desire for freedom from the slavery of ancient authority. So far, there are no strong indications of it, and my own work has been more appreciated in an alien country, the United States, than in my native land.

But I am thankful that there is a country which is free from the trammels of tradition, and if I could republish the work it certainly would be in that country.

And what has England gained by her worship at the shrine of ancient geometry? Simply this, that she cannot boast of a single name in connection with the establishing and developing of those great principles which underlie modern synthetic geometry. Both Mulcahey and Townsend formally acknowledge their indebtedness, for nearly all their subject matter, to the great French Geometers, Poncelet and Chasles, and the latest addition to the English literature on this subject is a translation from the Italian of the work on Projective Geometry, by Prof. Cremona, of Rome.

What Canada has to gain it is difficult to see. That it will be any greater than that of England I do not believe.

N. F. DUPUIS.

ALGEBRA.

$$75. \text{ PROVE } (by+az)^3 + (bz+ax)^3 + (bx+ay)^3 - 3(by+az)(bz+ax)(bx+ay) = (a^3+b^3)(x^3+y^3+z^3-3xyz).$$

SOLUTION by the EDITOR.—This is of the form $a^3+b^3+c^3-3abc$, of which one set of factors is $(a+b+c)(a+wb+w^2c)(a+w^2b+wc)$ where $w^3=1$. See EDUCATIONAL JOURNAL for July, 1890. Hence the given expression is equal to

$$(a+b)(x+y+z) \left\{ \begin{array}{l} (by+az) \\ +w(bz+ax) \\ +w^2(bx+ay) \end{array} \right\} \left\{ \begin{array}{l} (by+az) \\ +w^2(bz+ax) \\ +w(bx+ay) \end{array} \right\}$$

And the last two factors may be written,

$$\left\{ \begin{array}{l} a(z+wx+w^2y) \\ +b(y+wz+w^2x) \end{array} \right\} \left\{ \begin{array}{l} a(z+w^2x+wy) \\ +b(y+w^2z+wx) \end{array} \right\}$$

which may be multiplied out and written

$$\begin{aligned} & a^2(z+wx+w^2y)(z+w^2x+wy) \\ & + b^2(y+wz+w^2x)(y+w^2z+wx) \\ & + ab(y+wz+w^2x)(z+wx+w^2y) \\ & + ab(z+wx+w^2y)(y+w^2z+wx) \end{aligned}$$

Multiplying the brackets out this becomes

$$\begin{aligned} & a^2(x^2+y^2+z^2-xy-yz-zx) \\ & + b^2 \left(\begin{array}{l} \text{ " " " " } \\ \text{ " " " " } \\ \text{ " " " " } \end{array} \right) \\ & + wab \left(\begin{array}{l} \text{ " " " " } \\ \text{ " " " " } \\ \text{ " " " " } \end{array} \right) \\ & + w^2ab \left(\begin{array}{l} \text{ " " " " } \\ \text{ " " " " } \\ \text{ " " " " } \end{array} \right) \end{aligned}$$

And this is evidently

$$(x^2+y^2+z^2-xy-etc.)(a^2+b^2+wab+w^2ab)$$

Now the first bracket along with the $x+y+z$ of the first step gives

$$x^3+y^3+z^3-3xyz. \text{ The last bracket is } = a^2+b^2+ab(w+w^2), \text{ and } w+w^2 = -1, \text{ since } w^3=1.$$

Hence this bracket = a^2-ab+b^2 , and with the $a+b$ of the first step makes a^3+b^3 . Thus the whole expression may be written

$$(a^3+b^3)(x^3+y^3+z^3-3xyz).$$

$$76. \text{ Solve } 9x^3 - 9x - 4 = 0.$$

SOLUTION.—We see that $x^3 = x + \frac{4}{9}$. (A)

Assume $x = w\sqrt[3]{r_1} + w^2\sqrt[3]{r_2}$, where $w^3 = 1$, i.e., $w = 1$, or $w = -\frac{1}{2}(1 \pm \sqrt{-3})$. Cube this assumed identity,

$$\therefore x^3 = r_1 + r_2 + 3w\sqrt[3]{r_1r_2}. \text{ (B). Comparing A and B we see that } \frac{4}{9} = r_1 + r_2. \text{ (C)}$$

$$\text{and } \frac{4}{9} = w\sqrt[3]{r_1r_2} \text{ (D), or } \frac{4}{9} = r_1r_2.$$

$$\text{From C, } r_1 + r_2 = \frac{4}{9} r_1$$

$$\text{or } r_1 - \frac{4}{9} r_1 + \frac{4}{9} r_2 = 0 =$$

$$\therefore r_1 = \frac{4}{9}, \text{ and } r_2 = \frac{4}{9}$$

$$\text{and } x = \sqrt[3]{\frac{4}{9}} + \sqrt[3]{\frac{4}{9}} = \frac{2}{3}(\sqrt[3]{9} + \sqrt[3]{3})$$

$$= \frac{2}{3}(2 \cdot 080084 + 1 \cdot 442250)$$

$$= \frac{2}{3}(3 \cdot 522334) = 1 \cdot 174111 +$$

[See "Algebraic Analysis," Part I., by McLellan and Glashan. Ginn & Co., Boston. Pp. 418; \$1.60.]

$$77. \text{ Solve } x+y^2=7$$

$$x^2+y=11.$$

SOLUTION.—By substitution

$$x+(11-x^2)^2=7.$$

$$\therefore x^4-22x^2+x+114=0$$

$$\therefore (x-3)(x^3+3x^2-13x-38)=0; \therefore x=3$$

$$\text{or } x^3+3x^2-13x-38=0, \text{ Let } x=z-1$$

$$\therefore z^3-16z-23=0. \text{ (A)}$$

Assume $z = w\sqrt[3]{r_1} + w^2\sqrt[3]{r_2}$, where $w^3 = 1$

$$\therefore z^3 = (r_1+r_2) + 3w\sqrt[3]{r_1r_2}, \text{ but from A}$$

$$z^3 = 23 + 16z. \text{ By comparison we see that}$$

$r_1 + r_2 = 23$; and $r_1 r_2 = 4096/27$

$\therefore r_1^2 - 23r_1 + r_1 r_2 = 0$, whence we get

$r = \frac{1}{2} [23 \pm \sqrt{23^2 - 4 \cdot \frac{4096}{27}}]$

$= \frac{1}{2} (23 \pm \frac{1}{3} \sqrt{-6303})$

$= 11 \frac{1}{2} \pm \frac{1}{6} \sqrt{-6303}$; whence z , and hence x .

[See "Algebraic Analysis," Part I., p. 301.]

78. Solve $2x^3 + 6x^2 + 1 = 0$.

SOLUTION.—The first step is to transform the equation into a form containing only x^3 and x . Now x^2 will disappear when we substitute $y = x + 1$; thus we get

$2y^3 - 6y + 5 = 0$, when the second power is absent.

Now assume $y = w\sqrt[3]{r_1} + w^2\sqrt[3]{r_2}$, where $w^3 = 1$.

Cube and $y^3 = r_1 + r_2 + 3y\sqrt[3]{r_1 r_2}$. But the equation gives

$y^3 = -\frac{5}{2} + 3y$. Comparing these, we see that we must have $r_1 + r_2 = -\frac{5}{2}$

and $\sqrt[3]{r_1 r_2} = 1$, i. e., $r_1 r_2 = 1$

$\therefore r_1^2 + r_1 r_2 + \frac{5}{2} r_1 = 0$

that is $r_1^2 + \frac{5}{2} r_1 + 1 = 0$.

This equation gives one value of $r_1 = -2$, whence $r_2 = -\frac{1}{2}$

\therefore one value of $y = -\sqrt[3]{2} - \frac{1}{\sqrt[3]{2}}$ and hence

one value of $x = -1 - \sqrt[3]{2} - \frac{1}{\sqrt[3]{2}}$

[See "Algebraic Analysis," Part I., p. 300.]

79. (REV. T. ROACH, M.A.)—A galley rowed by slaves is moored at a point A which is four miles from B the nearest point of the coast, and C the nearest point of neutral territory is thirty miles from B, the coast-line BC being at right angles to AB. A slave on board the galley can swim, with the aid of the tide, $4\frac{1}{2}$ miles per hour, and can row $7\frac{1}{2}$ miles per hour. Find the point K in BC to which he must swim to reach C in the shortest time. Also, if he was missed after half-an-hour, and his pursuers rowed to B at the rate of four miles an hour, and then after some delay followed him on horseback at the rate of ten miles an hour, find how long they were delayed at B if they arrived at C forty seconds late.

SOLUTION by D. BIDDLE, Professor HENDRICKS, and others.

Let $x = BK$. Then $(4^2 + x^2)^{\frac{1}{2}} / (4\frac{1}{2}) + (30 - x) / (7\frac{1}{2})$ must be a minimum. By reference to the differential coefficients of the two terms, this is the case when $15x / (16 + x^2)^{\frac{3}{2}} = 9$, that is, when $x = 3$. The times occupied by the fugitive slave in swimming and rowing respectively will then be $1\frac{1}{2} + 3\frac{3}{4} = 4\frac{3}{4}$ hours in all, or 4 h. 42' 40". His pursuers would get to B an hour-and-a-half after he started from A, and would occupy three hours in riding to C. Consequently, the delay at B must have been $12' 40" + 40" = 13 \text{ min. } 20"$.—*Educational Times*.

✻ English ✻

Edited by F. H. Sykes, M.A., of the Parkdale Collegiate Institute, Toronto.

This department, it is desired, will contain general articles on English, suggestive criticism of the English Literature prescribed for Ontario Departmental Examinations, and answers to whatever difficulties the teacher of English may encounter in his work. Contributions are solicited, for which, whenever possible the editor will afford space.

LESSONS IN RHETORIC.

By J. E. WETHERELL, B.A.
POETIC DICTION.

A STUDY of the following selections will show in what respects the diction of poetry is at liberty to diverge from the ordinary usage of prose. The treatment of the subject will not be complete without an examination into the peculiarities of emotional and imaginative prose, as this type of prose, in the fervor and beauty of its thought, assumes spontaneously the elevated language of poetry.

THE TROSACHS.

The western waves of ebbing day
Rolled o'er the glen their level way;
Each purple peak, each flinty spire,
Was bathed in floods of living fire.
But not a setting beam could glow
Within the dark ravine below,
Where twined the path in shadow hid,
Round many a rocky pyramid,
Shooting abruptly from the dell
Its thunder-splintered pinnacle;
Round many an insulated mass,
The native bulwarks of the pass,
Huge as the tower which builders vain
Presumptuous piled on Shinar's Plain.
The rocky summits, split and rent,
Formed turret, dome, or battlement,
Or seemed fantastically set
With cupola or minaret,
Wild crests as pagod ever decked,
Or mosque of Eastern architect.
Nor were these earth-born castles bare,
Nor lacked they many a banner fair;
For, from their shivered brows displayed,
Far o'er the unfathomable glade,
All twinkling with the dew-drops sheen,
The brier-rose fell in streamers green,
And creeping shrubs, of thousand dyes,
Waved in the west wind's summer sighs.

—Scott.

(I.) *Poetic Brevity*.—Poetry, partly for effectiveness and partly for metrical reasons, condenses and abbreviates. This characteristic of poetic diction may be seen in the foregoing extract.

(1) In the use of the short form "o'er" for "over."

(2) In the omission of particles—(as) huge as, (as) wild crests as.

(3) In the omission of the article—(a) pagod, (a) mosque, (a) thousand dyes, (an) Eastern architect.

(4) In the use of compounds—"thunder-splintered," "earth-born."

(5) In the use of the possessive—"Shinar's Plain," "west wind's."

(II.) *Archaisms and Non-Colloquialisms*.—Poetry secures dignity by avoiding colloquial terms and hackneyed expressions. Words that have gone out of common use, and words that have a glamour of poetic association from having been used by many generations of poets, are peculiarly fitted for enhancing literary pleasure. In the selection before us we find a few such words—"dell," "rent," "glade," "sheen." Examine in this connection the expression, "nor lack'd they."

(III.) *Picturesqueness*.—The chief means employed to produce the poetic quality called picturesqueness are:

(1) The use of epithets, as "purple," "flinty," "living," "dark," "rocky," "shiver'd," "unfathomable," "sheen," "creeping."

(2) The use of imagery or word-painting, as in

(a) "The western waves . . . living fire."

(b) "Nor were these earth-born castles bare."

(c) "Waved in the west wind's summer sighs."

(IV.) *The Musical Element in Diction*.—Poetry, apart from metre and rhyme, seeks to secure an easy and pleasant flow of words, or to make the sound of words answer to the sense.

(1) Examine for melodious words the last four lines.

(2) Examine for alliteration the first four lines.

(3) Examine for imitative harmony in the words employed, (a) "Shooting abruptly," etc.; (b) "Presumptuous piled," etc.

A STORMY SUNSET BY THE SEASIDE.

The sun was now resting his huge disk upon the edge of the level ocean, and gilded the accumulation of towering clouds through which he had travelled the live-long day, and which now assembled on all sides, like misfortunes and disasters around a sinking empire and falling monarch. Still, however, his dying splendor gave a sombre magnificence to the massive congregation of vapors, forming out of the unsubstantial gloom the show of pyramids and towers, some touched with gold, some with purple, some with a hue of deep and dark red. The distant sea, stretched beneath this varied and gorgeous canopy, lay almost portentously still, reflecting back the dazzling and level beams of the descending luminary, and the splendid coloring of the clouds amidst which he

was setting. Nearer to the beach the tide rippled onward in waves of sparkling silver, that imperceptibly, yet rapidly, gained upon the sand.

With a mind employed in admiration of the romantic scene, or perhaps on some more agitating topic, Miss Wardour advanced in silence by her father's side. Following the windings of the beach, they passed one projecting point of headland or rock after another, and now found themselves under a huge and continued extent of the precipices by which that iron-bound coast is in most places defended. Long projecting reefs of rock, extending under water, and only evincing their existence by here and there a peak entirely bare, or by the breakers which foamed over those that were partially covered, rendered Knockwinnock Bay dreaded by pilots and ship-masters. The crags which rose between the beach and the mainland, to the height of two or three hundred feet, afforded in their crevices shelter to unnumbered sea-fowl, in situations seemingly secured by their dizzy height from the rapacity of man. Many of these wild tribes, with the instinct which sends them to seek the land before a storm arises, were now winging towards their nests with the shrill and dissonant clang which announces disquietude and fear. The disk of the sun became almost totally obscured ere he had altogether sunk below the horizon, and an early and lurid shade of darkness blotted the serene twilight of a summer evening. The wind began next to arise; but its wild and moaning sound was heard some time, and its effect became visible on the bosom of the sea, before the gale was felt on shore. The mass of waters, now dark and threatening, began to lift itself in larger ridges and sink in deeper furrows, forming waves that rose high in foam upon the breakers, or burst upon the beach with a sound resembling distant thunder.

Scott—*The Antiquary*.

It will be an interesting and instructive study to examine to what extent a poet, after he has abandoned the distinctively poetic vehicle of expression, still clings to a tendency to elevate his style by employing words drawn from the poetic mint, or words that have the heightened quality of impressiveness, or words that produce a pleasing rhythm or an imitative echo of the meaning. A study of the foregoing extract will enable the student to determine how far the diction of Scott, the novelist, is still the diction of Scott, the poet. The passage may be analysed under the four heads employed in the study of the poetic extract.

(I.) Notice the use of "ere" for "before."

(II.) We find an abundant supply of dignified and non-colloquial words,—"luminary," "unnumbered," "winging," "dissonant," "disquietude," etc.

(III.) The first paragraph is richly picturesque, by means of epithet and word-painting.

(IV.) Notice the alliteration that runs through the last sentence. Notice, also, the harmony of sound and sense in the last two sentences. The marked rhythm that characterizes the last sentence of each paragraph cannot escape notice.

NATURE'S MELODIES.

But what magic melodies,
As in the bord'ring realms are throbbing,
Hast thou, Winter?—Liquid sobbing
Brooks, and brawling waterfalls,
Whose responsive-voicèd calls
Clothe with harmony the hills,
Gurgling, meadow-threading rills,
Lakelets' lispings wavelets lapping
Round a flock of wild ducks napping,
And the rapturous-noted wooings,
And the molten-throated cooings
Of the amorous multitudes
Flashing through the dusky woods,
When a veering wind hath blown
A glare of sudden daylight down?

—Roberts.

This short extract from our own poet will illustrate some of the characteristics of poetic diction. The coining of new and expressive compounds is one of the striking features of Roberts' genius.

(For continuation of English see page 314)

It is generally contended that the highest efficiency of the public school is tested by its results in moral character, and hence that its highest duty is effective moral training.—*Dr. E. E. White*.

Examination Papers.

EDUCATION DEPARTMENT, ONTARIO—
DECEMBER EXAMINATIONS, 1890.

HIGH SCHOOL ENTRANCE.

HISTORY.

Examiners { JOHN SEATH, B.A.
D. FOTHERINGHAM.

NOTE.—Candidates will take any four questions in I., and any two in II. A maximum of five marks may be added for neatness.

I.—BRITISH HISTORY.

1. Explain, as fully as you can, how it has come about that the power of the Sovereign is now less than it was three centuries ago.
2. What makes an event important in history? Give a full account of what you consider the two most important events in the reign of George III., shewing why they are important.
3. Give an account of the "Great Rebellion," stating its causes and its results.
4. What is meant by the "New Monarchy"? What led to its establishment, and what to its overthrow?
5. Name the Tudor Sovereigns in order, explaining how they were related to one another; and give as full an account as you can of the last one of them.
6. Write full notes on any four of the following:
 - (a) The Act of Settlement.
 - (b) The Test Act.
 - (c) Petition of Right.
 - (d) Union of Great Britain and Ireland.
 - (e) Union of England and Scotland.
 - (f) The literary men of the reigns of the Georges.
 - (g) Thomas à Becket.

II.—CANADIAN HISTORY.

7. Narrate the principal events connected with the discovery and early settlement of Canada.
8. Explain, as fully as you can, the causes that led to the conquest of Canada.
9. Explain the steps by which the Dominion of Canada obtained complete control of the North-West.
10. Write explanatory notes on any four of the following
 - (a) The "Patriots' War."
 - (b) The Clergy Reserves.
 - (c) Reciprocity with the United States.
 - (d) Federal Union.
 - (e) Legislative Union.

DRAWING.

Examiners { D. FOTHERINGHAM.
THOMAS PEARCE.

NOTE.—Only two questions are to be attempted.

1. Draw in perspective a common chair, three inches in height, as seen below the level of the eye.
2. Make a drawing of a stovepipe, at least one-half inch in diameter and six inches in length, with an elbow at the top; showing the horizontal circular lines on it as seen on and above the level of the eye.
3. Make a circle having a perpendicular diameter of three inches. Divide the circumference into six equal parts by using a semi-diameter to measure both ways from each end of the diameter. Draw oblique diameters by joining opposite points of section. Join by straight lines the ends of the perpendicular diameter with the more remote ends of the other diameters. Join the less remote ends of the diagonal diameters by horizontal straight lines. Strengthen with ink all lines not being diameters from the circumference to the first point of intersection.

TEMPERANCE AND HYGIENE.

Examiners { THOMAS PEARCE.
D. FOTHERINGHAM.

NOTE.—Any five questions may be taken. A maximum of five marks may be added for neatness.

1. Name four or more of the colloidal parts of the human body. Describe the action of water on colloidal substances in living bodies.

2. Show how man imitates Nature in the process of distillation by means of the *alembic* and the *receiver*.

3. State the various steps by which the fluid known as alcohol was at first obtained.

4. "In confirmed spirit-drinkers the face and hands are often seen of dark mottled color, and in very bad specimens of the kind the face is sometimes seen to be quite dark."—(Text-book.) Explain, as fully as you can, the cause of this.

5. How does alcohol (although mixed with water) act upon the blood?

6. The normal temperature of the body is the same whether the person be an inhabitant of the Torrid or the Frigid Zone. Show how this equality of temperature is maintained.

AGRICULTURE.

Examiners { D. FOTHERINGHAM.
THOMAS PEARCE.

1. Explain the difference between simple and compound substances and show clearly to which class water belongs. State how, in this connection, you would describe the atmosphere.

2. Name five things necessary to the life of a plant; name its principal parts and tell whence and how it gets its food.

3. Explain fully the terms: soil, sand, clay, humus; and give a classification of soils.

4. Describe five or more of the means used to change dormant into active soils and to preserve the latter.

5. What is meant by tillage? How is tillage in Ontario often defective? Name some advantages arising from proper tillage.

6. Explain surface drainage and under drainage; and name the surface and vegetative indications of a want of drainage.

7. What are the causes of poverty in soils? Name the three substances which are most frequently removed and which are not restored in sufficient quantities.

8. What do you understand by rotation of crops? Name five or more benefits arising from rotation.

DICTATION.

Examiners { D. FOTHERINGHAM.
JOHN SEATH, B.A.

NOTE.—The Presiding Examiner shall read the passage three times—the first time, to enable the candidate to collect the sense; the second, slowly, to enable the candidate to write the words; and the third, for review.

A maximum of five marks may be allowed for neatness.

And now, what becomes of this breath which passes from your lips? Is it merely harmful; merely waste? God forbid! God has forbidden that anything should be merely harmful or merely waste in this so wise and well-made world. The carbonic acid which passes from your lips at every breath—ay, even that which oozes from the volcano crater when the eruption is past—is a precious boon to thousands of things of which you have daily need. Indeed, there is a sort of hint at physical truth in the old fairy tale of the girl, from whose lips, as she spoke, fell pearls and diamonds; for the carbonic acid of your breath may help hereafter to make the pure carbonate of lime of a pearl, or the still purer carbon of a diamond. Nay, it may go—in such a world of transformations do we live—to make atoms of coal strata, which shall lie buried for ages beneath deep seas, shall be upheaved in continents which are yet unborn, and there burnt for the use of a future race of men, and resolved into their original elements.

READING.

Examiners { J. E. HODGSON, M.A.
THOMAS PEARCE.

In the examination in Reading, the local examiners shall use one or more of the following passages, paying special attention to pronunciation, emphasis, inflection and pause. They shall also

satisfy themselves by an examination on the meaning of the reading selection, that the candidate reads *intelligently* as well as intelligibly. Twenty lines, at least, should be read by each candidate.

- I. Ring Out, Wild Bells, pp. 121-122.
- II. The Ocean, 247-249.
- III. Canada and the United States, 289-291.

WRITING.

Examiners { THOMAS PEARCE.
JOHN SEATH, B.A.

1. Write the following once:

Singing through the forests,
Rattling over ridges,
Shooting under arches,
Rumbling over bridges,
Whizzing through the mountains,
Buzzing o'er the vale—
Bless me! this is pleasant,
Riding on the Rail!

2. Write the following twice:

Tues. & Wed., Dec. 23rd & 24th, 1890; Messrs. McIntosh, Gilchrist & Co., 67 High St., Edinburgh, Scotland.

HAMILTON PUBLIC

SCHOOLS—PROMOTION EXAMINATIONS,
DECEMBER, 1890.

LITERATURE.

GRADE 5.

Values—13, 14, 13, 15, 13, 12, 5—85.

1. Tell what happened after the White Ship struck upon the rock.
2. Give the meaning of "lone post of death," "wreathing fires," "battle's wreck," "wrapped the ship in splendor wild."
3. Tell what you know of Hubert de Bourg and his kindness to Prince Arthur.
4. What is the meaning of "sported on the green," "yon little stream hard by," "could not well make out," "wonder waiting eyes," "quoth he."
5. Of what use is the hippopotamus?
6. Write the stanza beginning, "When Bill plays at cricket."
Write one of the stanzas which tell us what the little cottage girl was like.

GRADE 6.

1. Tell what you know of the pyramids.
2. Give the meaning of "lingering light of his boyhood's grace," "wandering waves of gold," "wafted his name above," "the wooden slab at his head."
3. Why is the name "ruby throat" given to the humming-bird? Tell how the nest is made. What makes the nest so difficult to find?
4. What is temperature? How is it measured? Tell how the thermometer is made.
5. Explain the following: "flaming forge," "flaming forge of life," "sinewy hands," "brawny arms," "earned a night's repose."
6. Write the last four lines of "The Village Blacksmith," and the second stanza of "Prayer."

GRADE 7.

1. Why does a linen garment feel colder to the skin than one made of cotton or wool?
2. Why does covering ice with sawdust preserve it?
3. Dark-colored clothes are cold in the shade and warm in the sunshine. Why? How is it with light-colored clothes? Why?
4. Give the meaning of "his life-blood ebbed away," "beheld life's morn decline," "my heart leaped forth," "scanty hoard," "the spark of life."
5. What is meant by "struggling moonbeam's misty light," "we hollowed his narrow bed," "little he'll reck," "random gun," "sullenly fring," "we carved not a line."
6. Tell how a plant begins to grow. If we reverse a germinating seed, placing it with the root upwards, what will take place?

7. Of what use is the fruit to the plant? Describe the fruit of each of the following plants: the bean, the maple tree, the dandelion, the cotton plant.

8. Write down the six lines beginning with, "One more gone for England's sake."

GRADES 8 AND 9.

1. Explain the expressions, "naked woods," "meadows brown and sere," "they rustle to the eddying gust," "upland, glade and glen," "yet not unmeet it was."

Write down the last two lines of this poem.

2. Give the meaning of each of the following:

- (1) Health and plenty cheered the laboring swain.
- (2) Parting summer's lingering blooms delayed.
- (3) The sober herd that lowed to meet their young.
- (4) The loud laugh that spoke the vacant mind.
- (5) Well had the boding tremblers learned to trace

The day's disasters in his morning face.

3. Give other words, without changing the meaning, for "severe afflictions," "celestial benedictions," "dark disguise," "earthly damps," "funereal tapers," "transition," "with raptures wild."

4. "She looked into Lord Ronald's eyes,
And told him all her nurse's tale."

What was "her nurse's tale?" (5)

What is the meaning of "the man will cleave unto his right," "the next in blood," "she went by dale, she went by down?"

5. "I shall allude to one debt of gratitude only which Germany owes to the poet of Stratford-on-Avon." What is this debt of gratitude? Name four other great poets and tell the country in which each lived.

6. Write the first stanza of "The Bells of Shandon," and the stanza of "Lady Clare" beginning "Down stept Lord Ronald."

* Hints and Helps. *

FIRST LESSONS IN PRIMARY WORK.

MANY young teachers who have made no study of primary work are now engaged in their first schools. Some of these have had superior advantages in the common branches and advanced studies, but have not so much as seen good primary teaching. No memories are theirs of a teacher who kept every moment occupied with delightful lessons and occupations; neither can they remember, later on, observing that any particular skill was shown in the instruction of the little ones. These teachers have a strong desire to teach the beginners in a better way than they themselves were taught, but how can this be done? There is but one way, and that is to buy at once some of the best text-books for intelligent guides, and read primary methods, both in books and periodicals. The short series of institute lessons which may have been attended, is altogether insufficient. No one can fully comprehend a course of lessons on any subject without giving study in return, and primary methods are no exception to this rule.

The obtaining of work for the beginners is left almost entirely to the teachers, especially in the country school. Ground will either be gained or lost the first month. The most important duty of the teacher is to keep these little ones busy every moment.

Never send little children to their seats without telling them just what to do. This is the golden rule in primary work, and if it could be blazoned upon the walls of every rural school, and kept by every teacher, a new era would begin.

The programme for seat-work should be as carefully made as for recitations, and should include regular times for examining and changing work. Although habits of industry are even more important than the lessons at this stage, yet the seat-work should be governed by and closely related to the class exercises. This presupposes a definite plan.

What should be commenced and what accomplished during the child's first month of school?

Reading, writing and language should be commenced immediately and carried on together.

Lessons in number may profitably be united with reading and language for some weeks.

Select with care about fifteen words for the reading lessons. Let three or four of these be names of interesting natural objects which can be brought into the school-room, as *leaf* and *flower*; names of familiar colors; words which give the children something to do, as *take*, or *hold up*; and the number words *one*, *two*, and *three*.

One of the best and most interesting devices in teaching the first reading lessons is to let the children place objects by the corresponding words on the blackboard or chart, and to have them perform acts in obedience to written directions. For example, the teacher writes, "Take the green leaf," and the child that promptly obeys is allowed to read the sentence.

In the language lessons which precede the reading exercises, awaken the children's observation of the beautiful things they are to see out of doors. Lead them to talk freely and to answer questions in complete sentences.

Most children can learn to write freely, rapidly and well in a year. There is no result which can be so easily gained by the teacher, if a few rules are persistently followed. Most important of all are correct copies. In the large training schools teachers are obliged to spend much time in blackboard practice, in order that their writing may be uniformly correct. If the teacher's handwriting contain errors in form of letters, a chart should be provided. Two or more times every day the children should fill their slates with neat copies of short sentences. One exercise each day should also be given to the careful study and copying of a single letter or short word, for the purpose of beginning thorough instruction in the correct form of letters.

At the close of a month or six weeks, the teacher, with an average class of beginners, should be able to show the following:—

Language: A growing interest in observing and talking about natural objects, and an improvement in the use of the complete sentence.

Reading: Daily improvement in erect position; clear, sweet, natural tones which can be heard by all the class; and such emphasis as brings out the thought. Ability of each child to read at sight, as a whole, any short sentence composed of the words selected, also to read the same words written in a column in any order.

Writing: Ability to keep a slate clean and hand in neat work; to copy two or three short sentences and not forget the period; to point out the straight and curved lines in any copy, and to form at least one easy letter just right.

Number: To notice number in common things, read and copy the words one, two and three, and recognize, at sight, the first five numbers in groups of objects or pictures.—F. L. T., in the *Public School Journal*.

EDUCATIONALS.

BEBE.

"Well, I am just discouraged," said Miss Guthrie, giving emphasis to her statement, by leaning listlessly back in her chair, and allowing her journal to drop to the floor.

"Why, what has happened?" queried Miss Firmly.

"Ah, it is these educational papers—the more I read them the more worthless seems my teaching. How I envy those schools where the theories reduce so beautifully to practice, where the children do right because it is right, and where they learn because they thirst for knowledge, and, yes, I may add, where the teachers are always patient and never scold or complain. If one dare for an instant be self-satisfied, along comes an educational and asks: Do your questions tend to develop the reasoning powers of your pupils? Are you what you wish your pupils to be? Are your lessons always properly prepared? What are your pupils reading? What are you doing for your own culture? and then—but if those papers were not so constantly reminding me of my imperfections, I might do better. I do believe I'll quit reading them altogether."

"I charge you, Margaret Guthrie, fling away school magazines," broke in Miss Tryze; "Miss Firmly and Bebe, attention! You remember I had once one Friday afternoon to do with as I pleased, so I hied me away over the intervening miles to a cosy brick schoolroom—Margaret, you must not interrupt me, I have right of way now—

with large high windows, where the sun shone in on geranium, fuschia and chrysanthemum. I am not going to talk to you of methods, but only of a few things that I saw.

"Very busy and bright were a certain class in the seats, so I set to work to find the cause, and, noting frequent glances in the direction of a blackboard, I too, looked, and found the secret. Four sketches represented what I shall call 'Tommy's fishing expedition in the Blue Bell.' By this time you know that the children were constructing stories, and I afterwards learned that the teacher was very grateful to 'The Teachers' Institute' for this delightful variation in composition exercises.

"At three, books and slates vanished, and an hour went merrily by with kindergarten songs and recitations. One of the latter, 'Good Morning Peeped Over Her Eastern Gate,' was so pretty that I did not forget to ask the teacher how she secured such very suitable selections. 'Out of my Educationals,' was the ready reply; 'didn't you see Good Morning in your Journal?' Truly I hadn't; but when I reached home I found it and read it twice.

"On the walls were half a dozen mottoes; a cluster of clematis, or morning glories, on a steel ground, half surrounding a beautiful Scripture text. Bands of cotton batting, at the top and bottom, completed the panels, which were hung with white cord. In the corner was a large scrap-book for the little mites, numerous cards with drawings of cats, dogs, pigs, nets, etc., for the use of the beginners in reading, and a dozen other little contrivances for teaching or entertaining. When the last urchin had withdrawn, the teacher and I sat down and discussed plans for an hour; but, always it was plain that the 'Educationals' were exerting a great influence in that room, and inciting that teacher to throw her whole being into the work. So, Margaret Guthrie, I charge you, fling away school magazines—if you dare."

"I think I understand Miss Guthrie's discouragement," said Miss Firmly.

"Oftimes I laid aside my 'Educational' after reading an article, in whose light I reviewed my deficiencies and mistakes, till I questioned why I had ever ventured to teach, and wandered on in my upbraiding of self, till I decided that my work was a failure. Then I remembered that

"In the lexicon of youth

* * * * *

There is no such word as fail!

"And also the admonition—

"Let the dead Past bury its dead!

Act—act in the living Present!

Heart within, and God o'erhead!"

"We feel a strange reluctance in confessing even to ourselves that we have been in the wrong, and though we require counsel and merit reproof quite as much as do our pupils, we are not as submissive as they under administration of these tonics; but the printed page exerts a peculiar spell, and we turn not away till the potion is swallowed; and for that very reason do I consider the Educationals invaluable."

"And to show you my wonderful forbearance, I am going to read you 'Samantha Allen's Exertion Party,'" added Margaret.

A HARD-WORKED WORD.

THE following paragraph, taken from a well-known English writer, shows what the word *get* is capable of:—

I got on horseback within ten minutes after I got your letter. When I got to Canterbury, I got a chaise for town; but I got wet through before I got to Canterbury, and I have got such a cold as I shall not be able to get rid of in a hurry. I got to the Treasury about noon, but first I got shaved and dressed. I soon got into the secret of getting a memorial before the board, but I could not get an answer then; however, I got intelligence from the messenger that I should, most likely, get one the next morning. As soon as I got back to my inn, I got supper and got to bed. When I got up in the morning, I got my breakfast, and then got myself dressed that I might get out in time to get an answer to my memorial. As soon as I got it I got into the chaise, and got to Canterbury by three, and about tea-time I got home. I have got nothing for you, and so adieu.

"Where can you get a word that equals *get* as an all-round worker?"—J. L. S., in *Journal of Education*.

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2. Refusing to take the paper from the Post Office, or requesting the Postmaster to return it, or notifying the publishers to discontinue sending it, does not stop the liability of the person who has been regularly receiving it, but this liability continues until all arrears are paid.

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✻ Editorials. ✻

TORONTO, MARCH 2, 1891.

THOSE EXAMINATIONS.

WE hope to be able to publish in our next number the names of the Examiners and Associate Examiners appointed conjointly by the Education Department and the Senate of the University of Toronto. These names will, no doubt, be closely scrutinized by many of our readers, with a view to ascertaining to what extent those who hold in their hands the fates of thousands of candidates may be expected to disclose in their official work the rare combination of qualities which go to make up the ideal examiner. Among these qualities scholarship, good judgment, teaching experience and freedom from the vanity which aims, consciously or unconsciously, to display the examiner's own acquirements or cleverness, at once suggest themselves.

A valued contributor, who has had much

experience, writes us, mentioning some points at which examiners have at times grievously erred in the past, and suggesting some cautions which they should, in justice to all concerned, not fail to observe. They should, he thinks, particularly bear in mind the cast-iron regulations prohibiting the use of any books not on the authorized list. They should remember that every headmaster is now required to sign a positive declaration that no unauthorized books have been used in his school during the year. On the other hand, the examiners should take special pains, which they have seldom done, to see what these books contain on each subject, and should take care that the questions do not surpass the limits prescribed by the printed courses of study. Through failure to do this the overpressure caused by too many subjects is often artificially increased by the whims of the examiners.

This friendly critic further says that "a great many of the papers set are too long for the time allowed; they are often drawn up, too, with the hardest questions at the beginning instead of at the end of the paper. Still further, the optional questions are scattered about in a very confusing fashion, so that the candidates often make mistakes and lose time in choosing which questions they will select."

A further irregularity, or unfairness, that has crept into the examinations is that "the Pass papers of the University have lately been almost as difficult as the Honor papers, while some of the Third Class papers have actually been more difficult than the corresponding papers for Second Class."

We have no doubt that every teacher of experience will agree with the writer of the foregoing that each of these defects in recent examination papers is a real hardship and leads to positive injustice.

It may be said that from the educational point of view it is better that the examiner should not follow too closely the lines of the text book, or observe too carefully the limits of the prescribed courses; that he should aim at ascertaining what the candidate is capable of doing, and to what extent his powers of independent thinking have been developed, rather than how faithfully he has conned or been drilled in his text-book. We quite agree with this view in the abstract. If the examinations were being held for a purely educative purpose the method suggested would be an excellent one. But when the examinations have practical consequences of great importance to the candidates; when they are conducted for the express purpose of ascertaining whether the examinees have mastered a given text-book, or portion of a text-book; when promotion to a higher

grade or the obtaining of a license to teach is made dependent upon their having successfully acquainted themselves with this prescribed work; and when precautions are taken and cast-iron regulations made for the express purpose of preventing them from deviating by a hair's breadth from such prescribed course, it is clearly but a matter of the simplest justice that they should be examined upon that course and that alone. To confine teacher and pupil rigidly within certain bounds and then to permit the examiner to roam at will in fresh pastures and on high hills beyond those bounds and expect the flock to follow him, would be obviously unfair and unreasonable.

So, too, from the educational point of view, it seems to us a thing to be desired that the Pass course of the Provincial University should be raised to a higher level of thoroughness and dignity than that on which it has heretofore been conducted. We have always regarded it as a very serious defect in the University methods, that while great attention has been given to the candidates for Honors in the various departments, the Pass course has been relegated to an inferior and quite secondary position, comparatively little attention being given to those taking this course and comparatively little proficiency being expected from them. Probably most educators will agree with us that a symmetrical, well-rounded and thorough Pass course is, for purely educational purposes, preferable to any Honor course, one-sided and defective at important points as the latter must necessarily be. But that is not the point now under consideration. That point is that examiners, whether acting for the Education Department or for the University, *i.e.*, whether examining for certificates or for college standings, should have regard to the prescribed conditions, and follow the prescribed courses and text-books. This is, as we have said, a matter of simple justice both to students who have expended time and means on the faith of published conditions and regulations, and to teachers whose professional reputations are at stake, and whose movements are so fettered and conditioned by the rules laid down and the amount of work exacted, that to go beyond the text-books is well-nigh impossible.

It will be a good day for public education in Ontario when teachers can be given more freedom of thought and action, more scope for the play of individuality in their profession; better opportunities for making mind-culture, rather than text-book cramming, the goal of their efforts. But in the meantime, it is highly desirable that good faith should be kept in examinations and fair-play given to examinees.

Contributors' Department.

A UNIVERSITY EXPERIMENT.

THE most interesting, if not the most important, educational experiment of to-day in any part of the world, is the founding of a new University in Chicago, with a sure prospect of an ample endowment, and some rather startling new departures in the matter of organization. The main-stay of the scheme, financially, is Mr. Rochefeller, President of the Standard Oil Company, but others have been liberal contributors so far, and both he and others, it is understood, will see that the experiment gets a fair trial.

And what kind of an experiment is it? No two universities are exactly alike. Start two on precisely the same lines and they will immediately begin to differentiate, each taking on an individuality of its own. But Dr. Harper, the President of the new Chicago University, is a unique man, and he is bent on avoiding from the start some weaknesses which other Universities would like to slough off if they could. His long experience in Yale has taught him much, but he has profited also by his connection with the great Chautauqua movement for popular education. His scheme is three-fold, the aim being to develop (1) a strictly academic institution for teaching and conferring degrees, (2) a system of outside popular culture, like that which goes by the name of "University Extension," and (3) a publication department to put on record the work of research done in and about the University. I shall confine my remarks in this paper to the first of these, and to one feature of that part of the scheme.

In American Universities, most of which have either professional departments or post-graduate courses, the undergraduate course of four years is objected to as being too long if either of the others is in view. On the other hand, owing to the want of good secondary schools, students enter the universities badly trained, and to shorten their four years' course to three years would, for all practical purposes, mean cutting off the highest year. This would be no great gain to the students from any point of view, and it would, so far the universities are concerned, mean simply a lowering of the standard of the Arts degree. Dr. Harper proposes a remedy of a different kind, and when it is clearly comprehended one feels disposed to wonder why no one ever thought of it before.

In the University of Chicago the work of tuition is to go on all the year round, with the exception of a vacation of four weeks. The teaching year of forty-eight weeks is to be divided into four "quarters," and each quarter into two six-weeks' terms. Twelve quarters will make an undergraduate course, and each student will be given a chance of taking the twelve quarters in three years, or of omitting one quarter in each year and taking four years for his course. The work will be so arranged that during each term he will have only two subjects, a major and a minor, the former calling for from ten to twelve hours a week, the latter for from four to six. The implication is, of course, that

these hours are to be spent in close application under the guidance of an instructor of some grade.

A brief description of the system in operation in the University of Toronto will enable those who are interested in the matter to make some useful comparisons. The session in Toronto lasts from the first of October till the first of June, with a three-weeks' vacation at Christmas—say about thirty weeks in all. As a matter of practice the University examinations take up the whole month of May, and the month of April is chiefly consumed by the students in privately revising—ordinarily called "cramming"—their work for the May examinations. Neither the one month nor the other is entirely lost, educationally speaking, but the effect of this system is to cut down the teaching to about twenty weeks. For considerably less than half a year the teacher and student are in contact, whereas under the Chicago system the relation would be kept up at the least for thirty-six weeks.

It may be said that the month of cramming in April and the month of mixed cramming and examination in May are equal in value for educative purposes to two months of class-room work. They may be so in cases where the teaching is practically worthless, but they are not so where the teachers are men of the right stamp. I am free to admit that a student may get more culture from a good treatise read and re-read in his study under the shadow of an impending examination, than from hearing the kind of lectures which are delivered in Universities by men who think their task is properly done when they work up subjects for themselves and retail the results *ex cathedra* to their classes. If the old-fashioned lecture is to remain in vogue as a method of teaching, then it is useless to talk of introducing any reform in organization of the Chicago kind.

That the Toronto University ideal is a defective one has for some time past been clear to many and will soon be admitted by all. The conception underlying the system is that of students listening to tuition for five months and undergoing examination for an additional one. The conception that should obtain is that of students undergoing a process of training from the beginning of the session to the very end of it. The time for final examination should be reduced to a minimum; indeed, examination should be part and parcel of the ordinary class-room work, and should proceed *pari passu* with the teaching which it is supposed to test. Our University is entirely behind the practice of other American Universities in this respect, and the sooner our practice is brought abreast of theirs the better.

With regard to terms, it may be urged that both students and teachers need a longer recess than four, or even than sixteen weeks. In reply to the former objection it should be noted that no student is required under the Chicago system to study more than thirty-six weeks in the year, and that very few would attempt to do more. For those few special arrangements would have to be made, and if this were done by the addition of competent instructors to the staff then each student

might usefully be left to determine for himself which of the four "quarters" he would use for vacation purposes. Some might prefer, as a matter of convenience, to take their recreation time in winter rather than in summer, and some might prefer it in fall or in spring.

But the principle of Dr. Harper's system might be introduced into Toronto without filling up the whole year with it. All that is needed in the way of radical change is to abandon the idea of a great University Examination in May as a test of the work of the whole session, and a most inadequate test it is well known to be. Let the work of testing be done daily or weekly in the class-room, as it is done now in the science laboratories. Then it will become part of the regular training and not a thing separate from it, as under the present system. The disappearance of the great May examination leaves both April and May clear for class-room work, and increases the number of teaching weeks to about thirty. This might easily be brought up to thirty-six, the Chicago number, without any injurious strain on either the minds or bodies of either the staff or the students. Many American universities begin work early in September, or keep it up till late in June, and some do both. High School teachers are, in many instances, the equals of our University teachers in scholarship; they get less salary, and they have harder daily work, yet they teach forty weeks in the year, and often work during part of the vacation besides. I would like to hear what serious objection can be urged against the change suggested.

WM. HOUSTON.

TORONTO, February 25, 1891.

Book Notices, etc.

Greek for Beginners. By Edward G. Coy, Prof. of Greek, Phillips Academy, Andover. The American Book Company.

Founded on Prof. Mayor's Greek lessons, but much altered. In leaving methods of presentation to the teacher and in its attempt to use no words in the earlier portion without connections in Latin or English, the book fills a place of its own. It is brief but complete and scholarly and admirable in its paper, type and accuracy. It requires the Hadley-Allen Greek grammar.

Macmillan's Geographical Series:—(1) Geography of Europe. By James Sime, author of History of Germany. (2) Geography of India, Burma and Ceylon. By Henry F. Blandford, late meteorological reporter to the Government of India. (3) Maps and map drawing. By William A. Elderton. Macmillan & Co., London.

(1) An important feature in this work is the treatment of the geological and historical changes; the former in connection with the physical features, the latter with the political divisions and towns. Trade, government, religion, climate, national character, etc., receive due attention. (2) Apparently the matter has been gathered with much research on the part of its author who had every opportunity of becoming acquainted with the countries. Plants and animals, people and governments are treated of at length. Statistics in areas, populations etc., are very numerous, and the illustrations are good. (3) This little work discusses maps ancient, mediæval and modern; explains the processes of constructing globes and maps; and gives directions for map-drawing from sight or memory.

* English. *

ENTRANCE LITERATURE.

LADY CLARE, BY TENNYSON.



ALFRED, LORD TENNYSON.

THE study that junior pupils may properly be asked to devote to *Lady Clare* should cover the following points: I. A general knowledge of the poem; II. A minute knowledge of the incidents and of the motives of the characters; III. The memorizing of the poem. To these the teacher would do well to add; IV. Some knowledge of Tennyson's life and of his other poems.

I.

To secure familiarity with the poem, it may be taken in portions as reading lessons. After each reading the pupils should be called upon to reproduce from memory the substance of what has been read. When the poem is finished, they should be required to tell the whole story. But before doing so, it would be well to discuss the meaning of any difficult words or phrases. Questions should be asked on at least the following passages:

S. 1. "Time when lilies blow."—The white lily blooms in July, the tiger lily in July and August. What does "blow" mean in "a full-blown rose?" "Clouds are highest up in air" when the sun is strongest, for we know that warmth tends to rarify and disperse mists and vapors.

S. 2. "I trow."—I believe, I trust. "They did not part in scorn" is a negative expression for an affirmative one. (Cp. He is no fool=He is a clever man.) They parted lovingly.

"Betrothed" is from the word "troth," meaning truth, fidelity. To plight one's troth—to vow fidelity in love—to be betrothed.

S. 3. "For my birth"—because of my high birth. (Cp. A man of [high] family; a woman of [high] rank.)

S. 5. "That all comes round so just."—That everything turns out so well. "Lord Ronald is heir . . . you are not the Lady Clare." The higher titles of English nobility and most of their estates (all those subject to "entail") pass only to the nearest heir. If Lady Clare were the nurse's child, she would cease by that very fact to be Lady Clare and owner of lands so broad. Lord Ronald, as next of kin to the dead Earl, would inherit the estates. (See S. 8 and S. 21.)

S. 6. "As God's above."—As surely as God is above us. (Cp. "As I live by bread" in S. 7.)

S. 7. "The old Earl." The title "earl" is the third highest title in English nobility, being below a duke and a marquis. The sons and daughters of earls are, by right of birth, lords and ladies. "Died at my breast"—died at an age when it was held to my breast=died a babe.

S. 8. "Like my own sweet child."—As if she were, etc.

S. 9. "Keep the secret for your life"—not: Keep the secret during your life; but: Keep the secret as you value your life—be sure you keep the secret.

S. 11. "All you have" and "When you are man and wife." Note the different meanings of "you."

"If there be any faith in man"—If in man there is such a thing as fidelity.

S. 12. "The man will cleave unto his right."—The man will insist on having what is legally his.

S. 15. "In a russet gown."—In a gown of brown, rusty color. "Dale"—little valley. "Down"—upland, hilly pasture land.

S. 17. "You shame your worth."—You dishonor (put to shame) your social position, good breeding, character—everything that makes you esteemed.

S. 19. "I am yours in word and deed."—I am yours by virtue of my promise to you and of my devotion to you. "Your riddle is hard to read."—Your riddle (i.e., her appearance in poor russet dress and her strange words) is hard to make out or interpret. This is an old sense of "read."

S. 21. "Next in blood," i.e., the nearest kinsman to the old earl. See S. 7.

S. 22. "You shall still be Lady Clare," because the wife assumes a title corresponding to her husband's.

II.

The pupil should be called upon to state what each successive stanza tells us of the story. His work should cover answers to the following questions: At what time of the year did the events of the story happen? On what terms were Lord Ronald and Lady Clare? Why does the poet say, "God's blessing on the day?" Why does Lady Clare declare that it is well not to be loved for her birth or her lands? Account for the nurse's exclamation, "O God be thanked!" Why does Lady Clare exclaim, "Are ye out of your mind, my nurse?" What are we told of Lady Clare's character by her saying to her mother, "Falsely, falsely, have you done?" etc. What desire prompts the nurse to say, "Keep the secret for your life?" What character is revealed in Lady Clare by her words, "I must speak out, for I dare not lie?" Why does she cry, "Pull off the brooch of gold?" Why does the nurse still say, "Keep the secret?" What does Lady Clare purpose doing that she should say, "I will know if there is any faith in man?" What does the nurse think will be the result of carrying out the purpose? Describe the spirit that prompts Lady Clare's reply, "And he shall have it." What does the nurse mean by asking for a kiss, and saying "Alas! I sinned for thee?" In what state of mind is Lady Clare at her request? Does the prayer, "Bless me, mother," show which feeling gained the day? Why does she dress herself in a "russet gown?" What had become of her ornaments that she should have only "a single rose in her hair?" When the doe "leapt up," "dropt her head" and "followed," what is revealed to us of the disposition of her mistress? Why does Lord Ronald say, "You shame your worth?" What does he mean in calling the Lady "The flower of all the earth?" Ought Lady Clare to have told Lord Ronald that she was "a beggar born?" Why does Lord Ronald say, "Play me no tricks?" Why did she stand proudly up? Had she been sitting? Why did her heart not fail? Why did she look "into Lord Ronald's eyes?" Narrate what she told her betrothed, putting yourself in her place. Why did Lord Ronald laugh at her story? Why did he turn and kiss her, and say "We two will wed to-morrow morn?" Tell as many of the traits of character as you can of (a) Lady Clare, (b) Lord Ronald, (c) Alice, the nurse. Why is the story called "Lady Clare" and not "Lord Ronald" or "Alice?" Change the characters of the story, and compose one in which the Lady keeps the secret and deceives her betrothed.

III.

The poem should be memorized. This memorizing is most easily secured by requiring the pupil to learn four or five stanzas as home work in connection with each reading lesson.

IV.

Alfred Tennyson, the greatest of living English poets, is to-day an old man of eighty-two, living chiefly in the Isle of Wight. A man who is greatly honored by all who revere a life pure and lofty, he has been the Poet Laureate of England for over forty years, and has been made a baron because of his greatness in literature. All his life he has been a poet. When a student at Cambridge in 1829, he surpassed his fellow-students in writing English verse. Since then he has written a great many poems. Some are short beautiful lyrics, filled with melody and the tenderest feeling. He has written

many long poems as well. *The Princess* tells us of an imaginary woman's university where no man was to enter on pain of death, and how the university was abandoned. In *Memoriam*, the poet pours out the feelings called up by the death of a friend. In this poem we find the stanzas, "*Ring Out, Wild Bells.*" *The Idylls of the King* describe the exploits of the legendary King Arthur and the Knights of the Round Table. *Maud* is a love story of great strength of feeling. His dramas are concerned with characters of English history, Queen Mary Tudor, Harold and Thomas à Becket.

It would be well to set apart some afternoon for the reading or recitation of some of Tennyson's simplest and most popular poems. The following might be chosen: *The Charge of the Light Brigade*, *Dora*, *Sweet and Low*, *The "Revenge"* (*H. S. Reader*), *The Miller's Daughter*, *The Lord Burleigh* (*H. S. R.*), *Crossing the Bar*.

Two of these we reproduce.

SWEET AND LOW.

Sweet and low, sweet and low,
Windy the western sea,
Low, low, breathe and blow,
Windy the western sea!
Over the rolling waters go,
Come from the dying moon, and blow,
Blow him again to me;
While my little one, while my pretty one, sleeps.

Sleep and rest, sleep and rest,
Father will come to thee soon.
Rest, rest, on mother's breast,
Father will come to thee soon.
Father will come to his babe in the nest,
Silver sails all out of the west
Under the silver moon;
Sleep, my little one, sleep my pretty one, sleep.

CROSSING THE BAR.

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea,

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the boundless deep
Turns again home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell,
When I embark;

For tho' from out our bourne of Time and Place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crossed the bar.

The following examination paper was set by the Department in July, 1888:

Down stopt Lord Ronald from his tower:
"O Lady Clare, you shame your worth!
Why come you drest like a village maid,
That are the flower of the earth?"

"If I come drest like a village maid,
I am but as my fortunes are:
I am a beggar born," she said,
"And not the Lady Clare."

"Play me no tricks," said Lord Ronald,
"For I am yours in word and deed."
"Play me no tricks," said Lord Ronald,
"Your riddle is hard to read."

O, and proudly stood she up,
Her heart within her did not fail:
She looked into Lord Ronald's eyes,
And told him all her nurse's tale.

He laughed a laugh of merry scorn:
He turned and kissed her where she stood:
"If you are not the heiress born,
And I," said he, "the next in blood—"

"If you are not the heiress born,
And I," said he, "the lawful heir,
We two will wed to-morrow morn,
And you shall still be Lady Clare."

I. State briefly how the foregoing stanzas are connected in meaning with those that precede them.

2. Why is the title of the poem "Lady Clare" and not "Lord Ronald"?

3. Explain the meaning of the italicized parts.

4. *Proudly stood she up!* What had been her attitude before this? Account for it, and explain why she now stood *proudly* up. What feelings should be expressed in reading the second stanza and the fourth?

5. What might "her heart within her" have failed? Why did she look "into Lord Ronald's eyes"?

6. At what did Lord Ronald laugh "a laugh of merry scorn"?

Supply the words left out in l. 20. Give the emphatic words in ls. 19 and 20, and state why they are emphatic.

7. Why is "will" used in l. 23 and "shall" in l. 24?

8. What in Lady Clare's conduct shows her noble character?

Primary Department.

READING.

ARNOLD ALCOTT.

"THERE is no sex in education." But we have not a few, even in this nineteenth century, who have yet to believe and to realize this statement. Nevertheless, there are magnanimous persons willing to learn the truth, who acknowledge that there is no difference in mind simply because of sex. Woman now takes her place with man in the professions. Miss Eastman, of the Association for the Advancement of Women, said, wisely, that a woman should receive as much salary as a man for doing the same work, provided she did it as well. It is the office, not the sex, which should be more frequently recognized. There has yet to dawn an era of enlightenment on this point.

Again, we find parents compelling their girls to take lessons in music, and in art, when these are positively distasteful, there being no talent in those directions. The old-fashioned notion that girls should receive accomplishments only, and boys mathematics, classics and science prevails too much to-day. However, our eyes are being opened, and now what concerns us most is to give the best and the most extensive education we can to all.

We have many gateways of knowledge. The little child, before it enters school, has been learning wonderful things about itself and its environments, by means of its five senses. We, older people, have another means of knowledge which might be called the sixth sense, *i.e.*, reading. From books we gain much of our knowledge. Then *how to read* is a very important question. It is said that the chief want found by professors in their students is the power to read, *i.e.*, to extract thought from printed matter. Some one has put it thus:—"Learning to read is learning to understand." Since reading forms such a large part of our means of getting knowledge, surely it will pay us well to know how best to train the next generation to read profitably.

We shall give some of the most important ideas on this subject which we have gleaned from various sources. Formerly, the word reading suggested to us standing up with book in hand and mechanically naming

words. Of course *oral reading* was the only thing thought of. And what did all this attention to oral reading produce? Good readers? Nay.

Bad plans, unphilosophical methods will not bring forth a worthy harvest.

The best way to teach *oral reading* is *not to teach it at all.*

Someone asks what is the object to be accomplished in teaching reading. It is to train the pupil in the power to get thought from visible or printed language. Thus the teacher adds another sense, a sixth sense, by which the mind may be nourished. A child must be taught thought-getting. Why is it that so many of those who have been through books and books know so little? Simply because they have not extracted thought definitely from the printed page; and have not assimilated what they did extract. A careless, indifferent manner of thought-getting allowed by a teacher is time worse than wasted.

THE IMAGINATION.

To train in definite thought-extraction we must set the imagination at work. *It* is one of the most important factors, if not the most important in education. Question minutely on the lessons:—Ask how old Fan is; what color her hair is; what color her eyes are; what she has on; also have the cat described and so on. Place the lesson before the pupils so vividly that the whole thing is pictured right before them as in a panorama. Display feeling and excite their sensibilities; for remember the imagination works by means of the feelings. Connect thought with thought and thus make knowledge organic. This article deals only with that phase of reading, known as silent reading, *i.e.*, the extraction of thought from printed matter. Carlyle says, "Of equal honor with him who writes a poem, is the one who reads it well."

WORD AND PHRASE EXERCISES.

RHODA LEE.

"WHAT shall we do with the word and phrase exercise given at the end of the reading lesson in the second book," is the question asked by a reader of the JOURNAL. We are thoroughly in sympathy with the difficulty experienced by the enquirer, and hope we may be able to throw some little light on the subject.

The compilers of the reader placed these exercises at the end of the lesson, principally for the purpose of review; they contain some of the most difficult words in the lesson and are supposed to serve as a test of the knowledge gained from the lesson. But while this may be one use to which the work may be put, they are primarily useful in the *preparation* for the lesson.

Before discussing this point, however, let us see what the real work of reading is in second-book classes. It is not *expression* of thought, for that in the opinion of most educators of to-day is beyond this stage of reading. The object we have in view is rather the cultivation of the power to *obtain* thought from written or printed matter. It is claimed that oral reading in junior classes is the ruination of good reading, and that it should not be indulged in at all until all

characters and words—the *media* of thought—are recognized so automatically as to allow the mind to be wholly occupied with the thought alone, and then, and then only, shall we have good reading. But we must admit that as yet public opinion in most parts will not allow us to dispense with oral reading in primary classes and therefore what we must do is to make the children thoroughly familiar with the words and phrases in the lesson before attempting to read it, either silently or orally.

Lesson vi. has been suggested as an illustration.

The words given in the list on page twenty-one do not embrace all the difficult ones. These and all others that are new or difficult should be taught at least two weeks before the lesson is read and the drill should be such as will insure automatic recognition when reading. The plans for teaching the words are numerous, but choose which you will, let them include three things: 1st. pronunciation, 2nd. use, 3rd. meaning. The words may be also used for spelling or dictation lessons, but all that is necessary to reading is embraced in the above three requisites.

In making a list of words endeavor to draw the words from the children telling only when necessary, and leave on the board only those with which some difficulty is experienced. Ask from your scholars, either orally or in writing, sentences containing the different words properly used. If possible let the sentence contain two or three of the words. Then try to get definite meanings. Study the lesson for which you are preparing, and select all the peculiar and difficult phrases. Add these to the book list and get the meanings or equivalent phrases, using them in connections other than those of the book lesson.

Following this plan the scholars ought to be thoroughly familiar with the words when they attempt to interpret the lesson.

Let us now turn our attention to the "reading lesson proper" as it is called. A five-minute talk on "bears" will arouse interest, and excite curiosity to learn something further from the lesson before them. Now let me advocate, in a lesson of this nature, the study of one paragraph at a time. Ask your pupils to read silently the first paragraph, that on page nineteen. Then question to discover what thought they have obtained from the passage. If they have not grasped all the thought ask them to read it again, and in this way gather every point. Proceed in this way to the end of the lesson.

In such lessons as No. XX, where there is a connected narrative you may ask your scholars to write on their slates or tell you orally the whole story.

In lessons such as No. VI. you will have to give a little help by asking such questions as—

1st. Name something a bear likes and tell me how he gets it.

2nd. How does a bear spend the winter?

If the thought is grasped and understood by the children they will readily tell it in their own words.

Clear picturing and vivid imagining are what we need to cultivate to insure good reading. Impress upon the children that

it is not merely the correct, but senseless repetition of words you want when you ask them to read. You want rather, some one to tell you the story naturally, to make you see it, to make you feel it, and only those who can do this are reading well.

HELLMUTH COLLEGE, LONDON, ONT.

We have pleasure in calling the attention of our readers to the card of the above named institution, which appears in another column of this paper. We need not enlarge upon the merits of this College, as its excellence is so generally known, and during its history of over twenty-one years it has held the foremost position as an institution of learning and culture for young ladies. There is a large attendance of students, and the number is increasing each year. There are excellent facilities for the pursuit of studies which comprise a liberal education. The various literary subjects, languages, sciences, music, art, elocution, etc., are all taught by specialists; and in regard to healthful and picturesque situation and extent of grounds Hellmuth's advantages could not be excelled.

SUCCESS has most certainly attended the career of the North American Life Assurance Co. A decade has now passed since the company was organized, and its record during that period is one continuous history of successes. The results of the past year's work are specially worthy of note. In every department tending to the welfare of the company, great strides have been made. We know of no better means of protection than a policy of life insurance in a good reliable life company, and we believe that the North American is one of our staunchest Canadian companies.

THE easy, quiet way in which T. A. SLOCUM'S OXYGENIZED EMULSION OF PURE COD LIVER OIL has won its way into public favor speaks volumes for its merits. At the office of the company, Toronto, Ont., can be seen scores of valuable testimonials, while any druggist will tell you that for all pulmonary difficulties it stands unrivalled.

WESTERN ASSURANCE CO.

FORTIETH ANNUAL MEETING OF SHAREHOLDERS.

Report of Directors—Continued Prosperity—Large Profits and Liberal Dividends—Considerable Addition to the Reserves—Good Management and Excellent Results.

The fortieth annual meeting of shareholders of the above company was held at its offices in this city at noon on Friday, 20th inst.

Mr. A. M. Smith, President, occupied the chair, and Mr. J. J. Kenny, Managing Director, was appointed to act as secretary to the meeting.

The secretary read the following annual report:—

In presenting the Annual Report of the business of the year ending December 31, 1890, the Directors are pleased to be able to submit to the Shareholders such gratifying evidence of the continued prosperity of the Company as is embraced in the accompanying accounts.

It will be seen from the Revenue Account that there is a profit balance on the transactions of the year of \$155,125.19.

A satisfactory increase is shown in the receipts from Fire premiums, while in the Marine branch certain lines of business, which have not resulted profitably in the past, have been discontinued, and the premium income somewhat reduced.

Two half-yearly dividends at the rate of ten per cent. per annum amounting to \$50,000, have been declared, and the sum of \$26,225.21 has been written off investments to bring them to their market value at the close of the year, when, owing to the disturbed conditions existing in monetary circles, almost all classes of securities were

more or less depreciated. After providing for these deductions from the year's earnings, \$75,000 has been carried to the Reserve, making that fund \$900,000, and \$16,186.39 remains at the credit of Profit and Loss Account. The total surplus of the Company—which these two latter amounts constitute—is, therefore, \$916,186.39, and deducting from this the amount estimated as necessary to reinsure or run off all existing risks say \$546,506.64, a net surplus remains over Capital and all liabilities of \$369,679.75.

STATEMENT OF BUSINESS FOR THE YEAR ENDING DECEMBER, 31, 1890.

Revenue Account.	
Fire premiums.....	\$1,883,582 70
Marine premiums.....	715,082 49
Less re-assurances.....	\$2,048,615 19
	388,123 30
	\$1,660,486 89
Interest account.....	45,367 18
	\$1,703,854 07
Fire losses, including an appropriation for all losses reported to December 31, 1890.....	665,071 26
Marine losses, including an appropriation for all losses reported to December 31, 1890.....	368,274 07
General expenses, agents' commission, etc.....	515,383 55
Balance to profit and loss.....	155,125 19
	\$1,703,854 07
Profit and Loss Account.	
Balance from last year.....	12,288 41
Profit for the year.....	155,125 19
	\$ 167,411 60
Dividend paid July, 1890.....	25,000 00
Dividend payable January 8, 1891.....	25,000 00
Written off securities.....	26,225 21
Carried to reserve fund.....	75,000 00
Balance.....	16,186 39
	\$167,411 60
Assets.	
United States and State Bonds.....	459,525 00
Dominion of Canada Stock.....	211,417 50
Loan Company and Bank Stocks.....	151,577 40
Company's building.....	65,000 00
Municipal Debentures.....	80,359 23
Cash on hand and on deposit.....	277,260 51
Bills receivable.....	34,508 27
Mortgages.....	18,458 60
Reinsurance losses.....	43,842 36
Interest due and accrued.....	4,989 50
Agents' balances and sundry accounts.....	210,918 82
	\$1,555,065 19
Liabilities.	
Capital stock paid up.....	\$ 500,000 00
Losses under adjustment.....	114,478 80
Dividend payable January 8, 1891.....	25,000 00
Reserve Fund.....	\$900,000 00
Balance profit and loss.....	16,186 39
	916,186 39
	\$1,555,065 19

A. M. SMITH,
President.
J. J. KENNY,
Managing Director.

WESTERN ASSURANCE OFFICES,
TORONTO, February 9, 1891.

AUDITORS' REPORT.

To the President and Directors of the Western Assurance Company:

GENTLEMEN.—We hereby certify that we have audited the books of the Company for the year ending December 31, 1890, and have examined the vouchers and securities in connection therewith, and find the same carefully kept, correct, and properly set forth in the above statement.

R. R. CATHRON,
JOHN M. MARTIN, F.C.A., } Auditors.
TORONTO, February 9, 1891.

In moving the adoption of the report the President said:

The Annual Report and accompanying accounts which you have just heard read, present, I think, so clearly the result of the business of the past year, and so satisfactorily the condition of affairs at the close of the year, that it is scarcely necessary for me in moving the adoption of the report to do more than congratulate you upon the happy auspices under which we meet at this, the fortieth annual gathering of the Shareholders of the Company. There is one item in the accounts, however, to which it may be well to refer particularly. I allude to the amount written off securities in order to enable us to place them in the Balance Sheet, as has always been our custom, at their market value on 31st December. You are aware that just at that time the prices of stocks and bonds generally were much depressed, and the fact that our securities were affected to such a comparatively slight extent is perhaps the best evidence that could

be offered as to the character of our investments. Moreover, I think we are safe in regarding this as merely a temporary depreciation, and that the former values will be, as indeed some have already been, regained.

I may be permitted to say also that, interested as I have been in this Company since its organization—for forty years as a stockholder, for twenty-five years as a director, and for the past eight years as its president—it is with a feeling of pride, which I think is pardonable, that I regard the position which the Western occupies to-day among the financial institutions of this country and among the insurance companies of this continent. Organized, as it was, at a time when the popular belief existed that indemnity for losses by fire—or in fact from death or any other calamity which might be covered by an insurance policy—could be obtained only from the other side of the Atlantic, it had secured at the end of its first ten years' struggle for existence against this popular delusion an annual premium income of only some \$60,000. The twentieth annual report shows that it had increased this five-fold, and at the close of its thirtieth year its income exceeded one million dollars per annum; and having thoroughly established its prestige at home it had extended its field of operations beyond the limits of Canada. It is now entering upon its fifth decade with an income of nearly a million and three-quarters, derived from all the provinces of the Dominion and from the United States, as well as from some of the British West India Islands; with cash assets of upwards of a million and a half; with a profit balance on its last year's transactions of over \$150,000; with a corps of tried officers and agents loyal to the Company and its interest; and, if I may say it without egotism, with an experience Board of Directors, several of whom may claim to be veterans, and not likely to be frightened by "fire," even though it may come (as it sometimes does through conflagrations) in "volleys" rather trying to the nerves. I think I may say—looking at what has been accomplished from small beginnings and looking at our present position—that by continuing the policy which has guided us in the past, of fair and liberal dealings with our insurers and just recognition of the services of our agents, upon whose judgment we have so largely to depend in the selection of business—we may confidently look for at least an equal measure of success for the Western in the future to that which it has enjoyed in the past, and, as a consequence, to its being in a position to continue to make satisfactory returns to its shareholders upon their invested capital.

Permit me to say before closing my remarks that—under a kind Providence—I feel that we are indebted in no small degree to the wisdom and untiring energy of our Managing Director and his able staff of assistants for the high position that our Company now occupies in the estimation of the insuring public.

Mr. George A. Cox, Vice-President of the Company, in seconding the adoption of the report said:

The satisfactory nature of the report now submitted to your approval, and the full explanations of the President, in moving its adoption, leave but little for me to say. There is, however, one important item in the statement to which reference has not been made, and that is the very substantial addition of no less than seventy-five thousand dollars to the Reserve Fund. With net earnings for the year equal to thirty-one per cent. of our paid-up capital, it was not unreasonable that the question should arise: Are you only going to pay a ten per cent. dividend, less than one-third of your net earnings? But I am sure the shareholders and the public will appreciate the prudence and recognize the necessity of providing in good years like this for less fortunate ones, when we are called upon to meet exceptional losses by conflagrations such as have occurred, and in all probability will occur again.

It is very satisfactory to know that after fully providing for our Reinsurance Fund, which takes \$546,506.64, we have a net surplus over and above our capital, and all liabilities to the public equal to about seventy-five per cent. of our paid-up capital.

The splendid position of the Western on its fortieth anniversary fully justifies the President in feeling proud of the Company and proud of his long and honorable connection

with it; and I shall also indulge a little in the same way. The best standard by which to judge a Company is the relative position it occupies at home, and the Western for many years has stood in the very front rank, its income from fire and marine premiums in Canada exceeding that of any other Company doing business here—English, American, or Canadian—and what is still more gratifying, its loss ratio on its Canadian business is considerably below the average of both the home and foreign Fire Insurance Companies making returns to the Dominion Insurance Department.

I may also refer to the relative position of the Company on this continent. Of the one hundred and sixty companies reporting to the Canadian and New York Insurance Departments, only some twenty exceed the Western in volume of business; and the steadily improving character of the Company's United States business, as shown by the diminishing loss ratio, affords good grounds for anticipating that the continued efforts in that direction of its representatives in the United States will make an equally favorable record for it there to that which it enjoys at home. It is gratifying to know that, notwithstanding some exceptionally trying years, the business of that branch shows a fair profit to the Company, and that the year just closed has been one of the most favorable in its experience.

I very heartily concur, Mr. President, in all that you have said as to the obligations we are under to our Managing Director, who brings to bear upon the business of the Company a thorough and ever-increasing knowledge of the insurance world and the insurance business in all its details. It is to his intelligent and close supervision of the Company's interests and to his efficient and well-selected staff that we are largely indebted for the position that we are so proud of to-day. I have much pleasure in seconding the resolution for the adoption of the report.

On motion of Mr. A. Nairn, seconded by Mr. William Ross, a cordial vote of thanks was passed to the President and Board of Directors for their services and attention to the interest of the Company during the past year.

Messrs. F. J. Stewart and J. K. Niven having been appointed scrutineers, the election of Directors for the ensuing year was proceeded with, which resulted in the unanimous re-election of the old Board, viz.:

Messrs. A. M. Smith, George A. Cox, Hon. S. C. Wood, Robert Beaty, A. T. Fulton, George McMurrich, H. N. Baird, W. R. Brock, and J. J. Kenny.

At a meeting of the Board of Directors, held subsequently, Mr. A. M. Smith was re-elected President and Mr. George A. Cox Vice-President for the ensuing year.

New Arithmetic.

Authorized by the Department of Education.

We have now in press and will publish shortly

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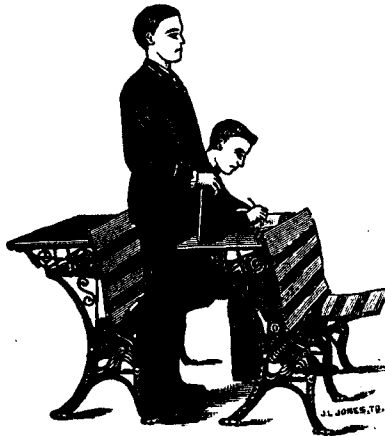
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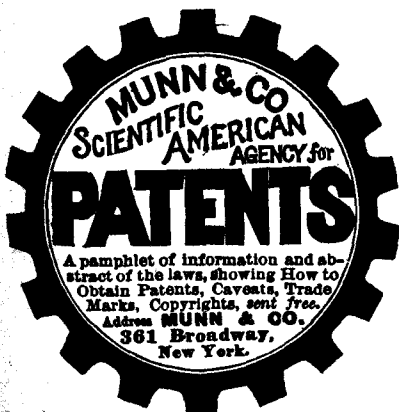
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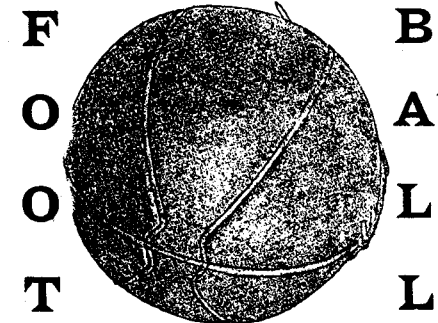
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- 4. First meeting of High School
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 tion. [H.S. Act, sec. 22; P.S.
 Act, sec. 107.]

March :

- 1. Separate School supporters to
 notify Municipal Clerk, [S.S.
 Act, sec. 40.]
- Minutes of County Council to
 Department, due. [P.S. Act,
 sec. 128.]
- Inspector's Annual Reports to
 Department, due. [P.S. Act,
 sec. 183 (6).]
- Auditor's Reports on the School
 Accounts of High School
 Boards and the Boards of cities,
 towns, villages and townships,
 to Department, due.
- Financial Statements of Teachers'
 Associations to Department,
 due.

- 26. High, Public and Separate
 Schools close for Easter holi-
 days. [H.S. Act, sec. 50.]

27. GOOD FRIDAY.

30. EASTER MONDAY.

- 31. High, Public and Separate
 Schools open after Easter holi-
 days. [H.S. Act, sec. 50.]

April :

- 1. Notice from candidates for First
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 B, to Department, due.

Return by Clerks of counties,
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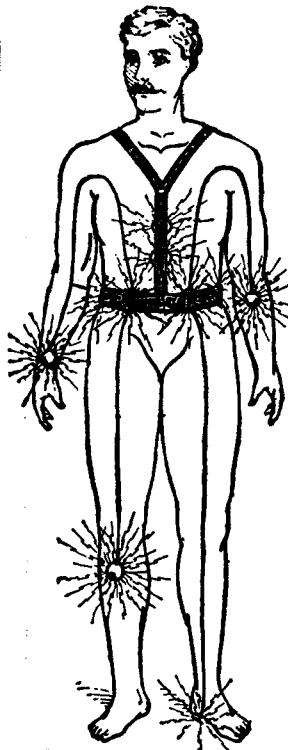
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