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Vol. VI.
No. 10.

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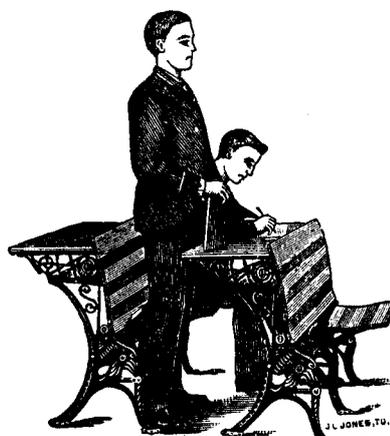
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OFFICIAL CALENDAR

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EDUCATION DEPARTMENT

October:

- Notice by Trustees of cities, towns, incorporated villages and township Boards to Municipal Clerk to hold Trustee elections on same day as municipal elections, due. [P. S. Act, sec. 103 (1).]
- Night Schools open (Session 1892-3).

High School Entrance Examinations. SELECTIONS FOR LITERATURE. 1893.

- Lesson V. Pictures of Memory.
- Lesson X. The Barefoot Boy.
- Lesson XIX. The Death of the Flowers.
- Lesson XXIV. The Face Against the Pane.
- Lesson XXVI. From the Deserted Village.
- Lesson XXXV. Resignation.
- Lesson XL. Ring Out, Wild Bells.
- Lesson XLII. Lady Clare.
- Lesson LII. Jacques Cartier.
- Lesson XCI. Robert Burns.
- Lesson XCII. Edinburgh after Flodden.
- Lesson XCVIII. National Morality.
- Lesson C. Shakespeare.
- Lesson CII. The Merchant of Venice—First Reading.
- Lesson CIV. The Merchant of Venice—Second Reading.

SELECTIONS FOR MEMORIZATION. Fourth Reader

- The Bells of Shandon, pp. 51-52.
- To Mary in Heaven, pp. 97-98.
- Ring Out, Wild Bells, pp. 121-122.
- Lady Clare, pp. 128-130.
- Lead, Kindly Light, p. 145.
- Before Sedan, p. 199.
- The Three Fishers, p. 220.
- The Forsaken Mermaid, pp. 298, 302.
- To a Skylark, pp. 317-320.
- Elegy, written in a country churchyard, pp. 331-335.

ADDENDA TO TEXT BOOK LIST.

The following additional Text Books were authorized by the Department of Education on August 24, 1892, subject to the provisions of Section 175 of the Public Schools Act, 1891.

COLLEGIATE INSTITUTES AND HIGH SCHOOLS.

Classics:

- First Latin Book, by J. Henderson, B.A., and J. Fletcher, B.A., price. \$1 00 (The Copp-Clark Co.)
- Primary Latin Book, by A. Carruthers, B.A., and J. C. Robertson, B.A., 1 00 (Methodist Book and Pub. House.)

PUBLIC SCHOOLS.

English:

- Public School History of England and Canada (new) by W. J. Robertson, B.A., 0 30 (The Copp-Clark Co.)

NOTE—CHANGE IN PRICE:

- Public School Writing Course, each number (to July, 1894), 0 06 (After July, 1894, Five Cents.)

The Department of Education has also ordered that the Public School History of England and Canada, by G. Mercer Adam and W. J. Robertson, B.A., authorized in 1886 and in use at present date in the Public Schools of Ontario, shall cease to be authorized on and after July 1, 1894.

Candidates not in attendance at the School of Pedagogy, but who are eligible to present themselves at the written examination in December, are hereby notified that Reading, Drill, Gymnastics and Calisthenics are compulsory for all male teachers; and Reading, Drill, and Calisthenics for female teachers.

There will be no examination in the Commercial Course this year.

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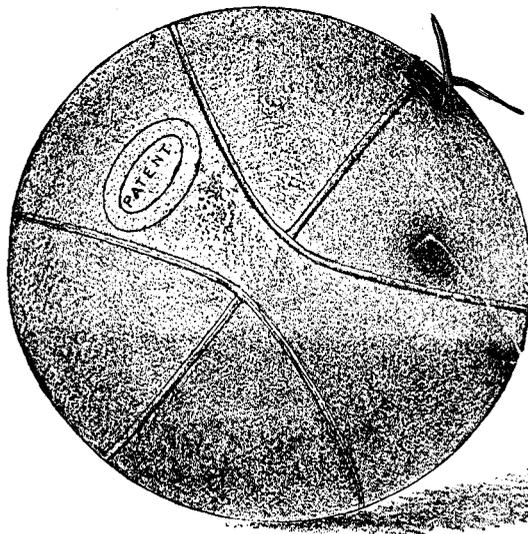
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JOINT AUTHORSHIP.—The authors' names are themselves a guarantee of accurate scholarship and practical methods. The collaboration, and the revision and criticism of each other's work, have produced of the utmost value in securing accuracy and due proportion.

The book is intended for use, not to display knowledge; it is for High School work, as it is or should be, not a book of reference for advanced students; it is progressive, but not radical; it will help the teacher to teach and to train, instead of to cram; it will develop a reading power early, instead of being that to be acquired late, if at all; it is a book of reference and a book for practice, combined, and not confused; it is the only book of similar scope in which references are made in an annotated edition of Caesar.

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TORONTO, OCTOBER 1, 1892.

Vol. VI.
No. 10.

✻ Editorial Notes. ✻

OWING to some misunderstanding, the article "Does Our Education Educate," by Mr. Turnock, in *The Week*, to which we referred editorially in last number, was held over. It will be found in this number.

WE have given a good deal of space to Columbus Day Exercises in this number, our object being to provide as much variety

and those assigned from Fourth Reader are to be found in Third. We have made the necessary corrections.

SUPERINTENDENT SWEET, of San Francisco, says :—

"The real secret of having children learn to read is to furnish them with an abundant supply of interesting matter to read. When a child begins to read books from a love of them, he begins to educate himself. The more difficult reading matter, used by higher grades, will increase the

and readiness in class. The moral is, that it will pay the teacher well to interest himself, as opportunity offers, in promoting the circulation of good magazines and books in the homes of his pupils.

At the head of our editorial columns we give as full a list of coming Conventions as we have been able to procure. The large number of these Conventions taking place within the space of a few weeks makes it impossible for us, without omitting much matter of a useful and practical character,



THE EMBARKATION OF COLUMBUS AT PALOS.

From the October Century Magazine.

as possible, in order to give teachers an opportunity to select, according to the stage of advancement of their pupils. This makes it necessary to hold over a good deal of practical matter, also Book Notices, etc.

OUR thanks are due to the friend who has kindly called our attention to an error in the announcement of subjects for Prize Lessons, for Third and Fourth classes in Literature. The lessons assigned from Third Reader are to be found in Second Reader,

mental grasp of the pupils and their ability to read well at sight. But the chief emphasis must be laid on the highest object of all reading, viz., an acquaintance with the literature for the truth it contains, for the ennobling sentiments it inculcates, and for the high ideals it presents."

We commend these thoughts to the consideration of our readers. We have no doubt that every observant teacher could tell pretty accurately which of his pupils are liberally supplied with attractive reading at home, by their superior intelligence

to attempt anything like complete reports. If, however, the Secretaries or other friends will oblige us with very brief notes, suitable for our Notes and News columns, or with copies of local papers containing reports they will confer a favor. We specially request, too, that our friends will, in the interests of the profession, bring to our notice any specially helpful papers that may be read, or model lessons that may be given. We shall be glad to publish such, so far as our space-limits may permit.

* English *

Edited by Fred. H. Sykes, M.A., EDUCATIONAL JOURNAL, Toronto, to whom communications respecting this department should be addressed.

A LESSON IN GRAMMAR.*

THE CONSTRUCTION AND FUNCTIONS OF THE INFINITIVE.

1. [The teacher (T.) has placed on the blackboard the following sentences :

<p>{ I will go. I wish to go. I can go. I am able to go.</p>	<p>{ I will be praised. I wish to be praised. I may be praised. I may happen to be praised.</p>
--	---

{ I should go to town.
{ It is to my advantage to go to town.

He turns to the pupils, and asks some one or other of them (P.) to point out the infinitives. When this is done, he continues:] T. Do you notice any peculiarity in the way the infinitive is joined to the finite verb? P. Sometimes it has "to" to connect it with the finite verb; sometimes it is without any joining word. T. What causes the difference, the infinitive itself or the finite verb? P. The finite verb, for we have the same infinitive "go," yet we say "I will go" and "I wish to go." T. Which is it more common to find, the infinitive with "to" or without it? P. In the sentences before us we have as often the one as the other. T. Very good. But let us look at language generally. [He turns to the board, upon which stands the following passage:]

"Let me go with you," the brother said; "you do not wish to leave me here." But John replied: "That cannot be; you must stay here. The boat is too small to hold more than four. To put in five on such a night as this would be rashness. Stay an hour longer, and by that time we shall have returned." He helped him shove off the boat, and in a few minutes nothing was to be seen of it. The night was cold, and though the sailor was cramped on the narrow ledge where he had to stand, he felt that he ought not to move, lest the slightest stumble might plunge him into the waves below. They will soon be back, he kept saying, and I shall be safe. But one hour slipped into another, and no glimpse of the returning boat could be seen."

T. Pick out, first, the verbs which take the infinitive without "to," and add any that you can think of. [Pupils busy themselves writing down: "let," "do," "can," "must," "shall," "helped," "might," "will," "could," "make," "bid," "see," "hear," "feel," "need."] T. Then you cannot get a very large list, naming only the present tense of the verbs we have? P. Let, do, can, must, shall, will, help, make. T. Take now the present tense form of verbs that require "to" with the infinitive, and add what others you can. [The pupils write out "be," "feel," "have," "ought," and add without delay a great number of verbs, "wish," "desire," "try," "deserve," etc., etc.] T. Which are the more numerous, the verbs that take "to" with the infinitive, or those verbs which do not? P. Those which do. The others are very few. T. Do you notice any instance where the infinitive is used, not after a finite verb? P. "To put . . . would be rashness." T. Then the infinitive as subject . . .? P. The infinitive as subject requires "to."

2. T. Has "to" any force in the sentence you have referred to? P. It has none. If it had, the subject of the verb would be governed by a preposition, which would be absurd. T. Has "to" any force in the following sentences?

- (a) He came to see me.
(b) He wishes to see me.

P. In (a) it means "in order to," it shows the purpose; in (b) it has no force. T. Some people mark this difference you point out by a name; they call the infinitive with "to," denoting purpose, the GERUNDIAL INFINITIVE. [Writes the term on the board.]

*The present paper presupposes a knowledge of the Infinitive as far as the four forms—the present and the perfect active, and the present and the perfect passive. See pp. 138-9 of the last issue of THE JOURNAL.

8. T. What do you notice peculiar in the following?

He has a house to let.
There are rooms to rent.

P. The infinitive really means "to be let," "to be rented." T. That means—? P. The active infinitive has the force of the passive.

4. T. Let us see now in what ways the infinitive may be used. What functions has it in the following?

- (a) To put in five would be rashness.
(b) He tries to learn.

P. In (a) it is the subject of the verb; in (b) it is the object of the verb. [T. writes (i.) SUBJECT OF THE VERB, (ii.) OBJECT, OF THE VERB, on the black-board.]

T. In . . .?

This is a house to let.

He is a man to admire.

This is a mistake to be avoided.

P. The infinitives are *adjectival phrases*. [T. writes (iii.) ADJECTIVAL IN FORCE.]

T. In . . .?

He came to see me.

They are here to stay.

P. These show the manner of the assertion; they are *adverbial phrases*. [T. writes (iv.) ADVERBIAL FORCE.]

T. How shall we deal with the infinitive without "to," as in

- (a) I shall go.
(b) He will go.
(c) He may go.
(d) He does not go.
(e) He must go.
(f) I helped him go.
(g) I made him go, etc.

P. In "helped him go," the infinitive is adverbial, while in "made him go" it seems to be the object—I caused his going. We find that "shall" + infinitive, and "will" + infinitive were verb-phrases to indicate the future tense. But I cannot classify the use of the infinitive. T. You must wait till you study the earlier form of our language for light on these constructions. They cannot be explained from the present; they are idiomatic phrases. Tell what you can, now, about the kind of infinitives—their kind and functions—in the following. Call attention to the instances in which "to" expresses purpose:

1. A sower went forth to sow.
2. She told the man to do it.
3. We were glad that she told him to go.
4. This is a measure to be supported.
5. We had scarcely any water to drink.
6. Fools who came to scoff remained to pray.
7. There are few houses to let in town, but these are to be had very reasonably.
8. He dared not say what he thought. They would not have believed him.
9. To see is to believe.
10. To dream, to hope, to fear, such is life.
11. To fancy such things one must be mad.
12. To ascend Mount Blanc is a task few undertake.
13. Unpracticed he to fawn, or seek for power,
By doctrines fashioned to the varying hour;
Far other aims his heart had learned to prize,
More skilled to raise the wretched than to rise.

DOES OUR EDUCATION EDUCATE?

THE recent controversy concerning the Ontario examinations for teachers and others will have accomplished some good if it is a means of directing attention to the practical results of our present system of education. We are in the habit of congratulating ourselves that we have in Canada a very excellent system of education, and in some respects we undoubtedly have. But is it, as a matter of fact, doing all that it should accomplish? A recent experience has caused me to wonder whether, after all, our educational methods do not fail in really educating, whether they do not result in turning out a large number of pupils and teachers possessed, perhaps, of a certain amount of book knowledge, but destitute of nearly all the other attributes of true education. It also serves to demonstrate that our official means of testing the educational qualifications of pupils and teachers must be sadly deficient;

that is, in the words of *The Week*, that "examination by writing is unreliable as the sole test of the results of a prolonged course of study or of the mental acquirements of a given student."

The experience I have referred to was not, by any means, an unique one. It was merely looking through the applications of a number of teachers for vacant teacherships. The positions applied for were the head mastership of the High School and the principalship of the common school in the largest and most important town in the North-West. For these positions there were over sixty applicants. All the applicants possessed at least second-class certificates, a large number were university graduates, the great majority of them had secured their qualifications in Ontario, and, for the most part, they had been actively engaged in the teaching profession. The positions and the salaries attached were such as should have secured applications from the highest class of teachers, and I have no reason for supposing that the large number of applicants who offered their services did not represent a fair average of the teachers who consider themselves able to fill and hold the necessary Government qualifications to occupy the higher positions in their profession.

In such a class one would naturally look for some of the best results of our Higher Education. It would be taken as a matter of course that those competent to take charge of the education of our youth should at least be able to write, to spell, and to use the Queen's English correctly; and it would not unreasonably be expected that they should exhibit some evidence of that good sense, sound judgment, culture and refinement which the best education is expected to produce and which, unless possessed by himself, a teacher cannot impart to those placed under his control. In these qualities, however, as well as in the elementary attainments first mentioned, the applications in question showed a large number of the applicants to be lamentably deficient. Fully seventy-five per cent. of them could be passed over without a second reading—many of them without being read through at all—and of the remainder it did not take long to discard all but half a dozen.

In the first place, the writing of most of the applications was bad; and the badness was not of that order which, because of its character, is often condoned in the writing of scholars and geniuses. A number were written in those large, irregular and clumsy characters which one is accustomed to find in the exercise books of young scholars. A still larger number were written in a prim, copy-book hand, some fairly good of its kind, some rather shaky, particularly in the flourishes, but all quite characterless, so much so that it was generally impossible to distinguish the sex of the applicant until the end of the letter was reached. The spelling was somewhat better than the writing, but mistakes in that were numerous. One applicant, for instance, announces that she is a "Gold medalist" of some educational institution. Another, who states he holds both Ontario and North-West Territory Second Class Certificates, spells the capital of the Territories "Reginna," not once but several times. One makes "through" a word of two syllables and divides it thus, "through;" one divides "reasons" into two syllables thus, "re-asons;" another divides "application" "applicat-ion;" another, "furthering" in this way, "further-ing." The applications containing these latter mistakes were not type-written, or one might be inclined to excuse the errors, nor do the mistakes appear to have been rendered imperative by great lack of space at the end of a line. The Queen's English suffers rather severely at the hands of these its guardians. One who holds an Ontario First Class Professional Certificate and states he has "taught English with good success," writes thus: "Having noticed your advertisement for a Principal to take charge of your Public School, I wish to apply for the same." This gentleman's specialty, according to his own statement, is mathematics, but it does not appear that his study of the exact sciences has taught him to avoid ambiguity of expression. It is not clear whether he is applying for an "advertisement," a "principal," or a "public school." An awkward arrangement of words such as the following is by no means infrequent: "Sir, Would be pleased to accept the situation you advertise as Principal of the Common School at a salary, etc." It is not uncommon for an applicant to state he encloses a "recommend," and tautological expressions

such as "gave good satisfaction," "taught with good success," abound, not only in the applications themselves, but also in the "recommends" of school inspectors and others. Punctuation is apparently considered to be of very little importance.

Besides defects such as the foregoing, one finds in connection with a considerable proportion of the applications some *gaucherie* giving evidence of boorishness and lack of judgment which it is difficult to imagine a highly-educated person being guilty of. One sends his application written on a big sheet of thick blue paper (10in. x 14in.), ruled in blue and red, evidently torn from some register, dirty withal, and folded fearfully and wonderfully. Another young man uses small sheets of thin, sea-green tinted paper, very suitable perhaps for *billets d'amour* to some village Amanda, but hardly calculated to win the favour of an urban School Board. One begins with the confidential "My dear Sir," and concludes with the ultra-formal "I have the honor to be, sir, your obedient servant," and some original souls, scorning conventionalities, place their "Dear Sir" at the extreme right instead of at the left of their note paper. An individual may lack worldly wisdom and yet be a genius; but the genius who prefaces his application by censuring his would-be employers for having dismissed their previous Principal, courts the treatment genius is but too often accorded by its contemporaries. The country dominie who thought it an important point to submit the information that on one occasion he was presented with "a costly inkstand, graced with the antlered head of a reindeer, a fancy china cup and saucer, an elegant fountain pen, a box of finely-tinted paper and envelopes and some other articles, accompanied by an address" is no doubt even yet wondering why he failed to secure the desired position. A similar feeling may perhaps be entertained by one who wrote "Should your Board, sir, be pleased to accept my application they may depend upon it that they will not regret their choice." But the serene self-confidence which inspired the following is probably superior to disappointment: "I feel confident that should you honor me with the appointment, I shall be able to afford you every satisfaction, and achieve for your school distinguished success." The philosopher whose lengthy application is chiefly a disquisition on the advantages of "experimental psychology," concerning which he has made an "exhaustive study" and some "unique experiments," would appear either to have omitted from his investigations one important class of humanity, viz., practical business men, or to have profited but little from his experiments. And the gentleman who seeks to impress the trustees with the splendor of his intellectual attainments by informing them that he is a "graduate of the American Institute of Phrenology" has apparently not a very high estimate of Western intelligence. Many of the applicants think—and, it may be, rightly—that to be a Methodist, or a Presbyterian, or a member of some other denomination, is a very important recommendation; but one appears to base his claims almost entirely on the following qualifications: "I am a member of the Methodist Church, the Christian Endeavor, and the Royal Templars of Temperance, have never used tobacco in any form, and can supply references from those who know me, showing my character to be blameless." It is indeed sad to think that one so excessively immaculate should have to content himself with the reflection that virtue is its own—and often its only—reward. The lack of intelligence shown by some applicants in submitting "recommends" and testimonials is indeed surprising. One is not impressed favorably with an applicant's past experience by looking through a dirty, greasy package of letters, some in red ink, some in violet ink, some in black ink and some in pencil, execrably written and spelled, certifying to the opinion held by the school trustees of some obscure township as to the holder's abilities. I cannot forbear quoting one of this class of testimonials: "We the undersigned Trustees for—School District do hereby certify that they have known— for a number of year in the capacity as School Teacher and that he is thorogly competent to teach a graded school according to the laws of the School act for the Dominion of Canada and we take great pleasure in recommensing him to any community in want of a teacher. You very truly." Unless assured that the applicant who relied on a testimonial such as this held a Second Class Teacher's Certifi-

cate, one would not suspect that his intelligence had been expanded and elevated by high education. One cannot but tremble for the interests of education in a community where such trustees have the management of school affairs. Some of the applicants send printed copies of their testimonials, but apparently they do not realize that this creates the inference either that they are so often applying for situations as to render copying their recommendations in each case too great an undertaking, or that they are displaying vanity and bad taste. One individual has not only his testimonials, but prints even his application itself, blanks being left for dates, salary, etc., the whole being surrounded by a very fancy border; and he evidently intends to make use of the application elsewhere if unsuccessful, for he concludes: "Return this pamphlet (sic) if my application is rejected."

It is, of course, not possible to cite every instance of lack of knowledge, culture and intelligence, but enough has been said to indicate what a large proportion of the sixty applications in question gave evidence of these defects in the applicants. And it must be remembered that in making an application for a situation the applicant naturally endeavors to present himself in every way in the most favorable light. When so much is gathered from mere letters of application, what would be the result of a more complete and searching examination into the applicant's abilities and characters? As I have said, these teachers are, or should be, the best results of our advanced education, and it is they who are conducting the education of the rising generation. Under the circumstances a doubt as to the practical results of our educational methods cannot but arise. I do not at present attempt to assign a cause for what I can only regard as a failure somewhere, or to suggest a remedy. I merely call attention to the serious fact.—F. H. Turnock, in *The Week*.

Teachers' Miscellany.

HOW IT IS IN ENGLAND.

THAT which we call a bowl is here known as a basin. In England you ask for a basin of bread and milk.

That which is known to us as a pitcher is here called a jug.

A donkey is here called a moke; in America a moke is a negro.

Local slang for a cab horse is "cat's meat," because the meat of horses is peddled around the streets for feeding to cats.

What we call crackers are called biscuit, and I suspect that is strictly correct.

What we call shoes are here known as boots, and what we call boots are here known as bluchers.

Our druggist is here a chemist, many of the older practitioners retaining the old spelling—"chymist."

What is here known as a hash we would call a stew, and what we call a hash is here known as a mince.

In England our overcoat becomes a great coat, our undershirt becomes a vest, and our drawers become pantaloons.

What we call sick the Englishman calls ill; sickness here implies nausea and vomiting.

What we call "stewing" (culinary term) the British call "simmering"; our "lunch" is here a "luncheon," and our "baggage" becomes "luggage."

What we call a telegram is here called a telegraph; it will probably never be determined which of the usages is the better. Our postal card is here a post card; cuffs become wrists.

That material known to us as canton flannel is here called swan's down, and our "muslin" is known hereabouts as "calico."

Our "locomotive" becomes "engine," and our "conductor" is here a "guard."

Here they call a street car a tram; correct. Here, too, an elevator is a lift, and that is right. Our "wheat" is called "corn," and our "corn" is called "trotters."

A "chill" is here called a "rigor," and the eruption commonly known among us as "hives" is here known as "nettle-rash." Candy is known variously as "sweets," "sweet-meats," and "lolly."

The word "apt" is exceedingly popular here. It is "apt to rain," "apt to be muddy," a man is "apt to go down town," a bank is "apt to suspend," etc. Even the best prints use this word as a synonym for "likely" and "like." Another barbarism everywhere prevalent in the United Kingdom is the use of the adverb "directly" for the conjunction "as soon as"; e.g., "directly he went out I shut the door."—*Chicago News*.

COMMON BLUNDERS.

A COUNTY superintendent in speaking of his institute, told the writer recently that he always planned for a short recess "between every exercise." He doubtless meant between every two exercises, as "between" does not go well with single things. The mistake is not an uncommon one.

A teacher recently said, when speaking of the government of his school, "I treat every pupil alike." Alike what? You can not treat one pupil "alike," and "every" indicates that they are taken separately. He meant to say that he treated *all* pupils alike.

A teacher recently said that he believed that "every pupil should have the same chance." This is a blunder of the same kind as the above. He meant that *all* pupils should have the same chance. "Every" is a distributive adjective and indicates that the objects to which it refers are to be taken *separately*.

"Now."—Many teachers use this little word "now" many more times than they need to. They are in the habit of unconsciously beginning every explanation and many of their sentences with it. The writer recently heard an institute worker use it *forty-seven* times in a single talk. "Now," this detracted much from the value of the exercise.—*Indiana School Journal*.

DESERTS IN THE OLD WORLD AND THE NEW.

THE greatest difference between the North American deserts and those of North Africa is in the greater amount of vegetation in the former. There are seen silver gray artemisiae, prickly cacti, cushions of moss, and at the foot of the hills juniper trees seven feet high, with trunks a foot thick. Such is the character of the deserts of Utah, Western Texas and the Gila region of California. Either the mean rainfall in the American deserts is greater than those of Africa, or else the flora of the American deserts is better adapted to a dry atmosphere. In both continents there is the prevalence of plains, with mountains rising from them like islands, with no intervening heaps of debris passing from the plains to the steep mountain slopes. This phenomenon is the more striking, as there are no rubbish deltas, even at the outlet of valleys 1,000 feet in depth. Another feature common to both is the large number of isolated "island" mountains and of amphitheatre formations in the valley. Also the splitting up of granite blocks and other rocks by heat.—*Exchange*.

PRESIDENT HARRISON, speaking of the teacher's vocation, at Saratoga Springs, declared: "There is none other like it. It has the power of multiplication. It has an element of life in it that no other work of life has. It is eternal. It has that communicating touch of intelligence, morality and patriotism which runs from one to another, and which goes, in the elements of character which come to it, to the skies. If not crowns of wealth, if not the luxury and ease of great fortunes are yours, yours will be a more enduring crown, if it can be said of you that in every touch upon the life of the young, you have lifted up."

AN American writer says that if the English Dean who writes so ardently in favor of corporal punishment in schools will go to France, where corporal punishment was abolished in the schools twenty-five years ago, he will find that they are better disciplined than the schools of his own "Merrie England," as the control is by reason and persuasion, not by force and fear.

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 5. Any such teacher may compete in any number of subjects, but in no case shall more than two prizes be awarded to one competitor.
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TEACHERS' CONVENTIONS FOR OCTOBER:

Carleton Co., at Richmond, October 6th and 7th.
 Nipissing and Parry Sound, at Parry Sound, October 6th and 7th.
 Prescott and Russell, at Vankleek Hill, October 6th and 7th.
 East Middlesex, at London, October 14th and 15th.
 South York, at West Toronto Junction, October 13th and 14th.
 Stormont Co., at Cornwall, October 13th and 14th.
 West Middlesex, at Strathroy, October 20th and 21st.
 Glengarry, at Alexandria, October 6th and 7th.
 North Essex, at Windsor, October 20th and 21st.
 Waterloo Co., at Berlin, October 13th and 14th.
 North Simcoe, at Barrie, October 7th and 8th.
 Leeds, No. 2, No. 4 at Brockville, October 20th and 21st.
 Northumberland, No. 15 at Cobourg, about the 20th October.
 Durham Co., No. 16 at Fort Hope, October 13th and 14th.
 East Victoria, No. 19; this County is divided, they have town-ship meetings.
 One in Bobcaygeon, October 14th, Verulam and Bobcaygeon.
 One in Kinmount, October 21st, Somerville.

✻ Editorials. ✻

TORONTO, OCTOBER 1, 1892.

PRIMARY TEACHING.

"SIMPLIFY and repeat," was the advice given by a certain celebrated preacher, Dr. Chalmers, we think it was, to one who sought advice with regard to the best mode of making his sermons effective. The prescription is no doubt a good one, if taken in moderation, but we can think of no better means for producing listless hearers, and, in course of time, empty pews, than the literal following out of this advice to an extreme. Be that, however, as it may in regard to the pulpit—we must not forget the shoemaker proverb—we have long queried whether in applying the methods

so highly recommended, and just now so much in vogue in the primary departments of public and model schools, we are not in great danger of running a sound principle "into the ground," by too much simplifying and repeating. We make the criticism with fear and trembling, and yet under a sense of duty to our convictions. In order to make our meaning clear, perhaps we cannot do better than to reprint *verbatim* a lesson which we clipped a few weeks ago from our enterprising and vigorous contemporary, the *Popular Educator*. The lesson is given by a reporter, as one taught in the lowest primary grade of the Training Department of the New York Normal College. We do not give it as in any respect peculiar, but as a fair sample of a kind of teaching which is just now very common and much approved:

Teacher.—Who will come to the board and write a story about the number 8?

6
Child.—(Writes) $\frac{2}{8}$ (with brown chalk).

Teacher.—I want some one to read that story.

Child.—6 brown trees and 2 brown trees make 8 brown trees.

Teacher.—Very good; another brown story.

Child.—6 brown pairs of stockings and 2 brown pairs of stockings make 8 brown pairs of stockings.

Teacher.—I would say, "Six pairs of brown stockings," but that was a true story. Another.

Child.—6 brown nuts—

Teacher.—Where from, May?

Child.—From the woods.

Teacher.—From what in the woods? Tell me the whole story.

Child.—From the trees. There were 6 brown nuts on one tree, and I found 2 more brown nuts on another tree, and that made 8 brown nuts.

Teacher.—That was a very pretty story. John; write me a different story, with black chalk.

4
Child.—(Writes) $\frac{4}{8}$

Teacher.—Who will read that story?

Child.—4 black birds and 4 black birds make 8 black birds.

Teacher.—Why?

Child.—Because two 4's make 8.

Teacher.—Another story in black.

Child.—I saw a wagon drawn by 4 black horses, and in front were 4 more black horses, and that made 8 black horses.

Other similar stories were told by the child; where mistakes were made, the child came to the abacus and corrected himself.

Teacher.—Who will make up a take-away story? (Subtraction).

Child.—My doll had 8 dresses and she wore out 6.

Teacher.—Then how many did she have left?

Child.—She had 2 dresses left.

Teacher.—Why?

Child.—Because 6 and 2 make 8.

Teacher.—Hold up 8 fingers, children. Now, we'll pretend these are 8 birds, sitting on a tree, 6 of them flew away, how many stayed?

Child.—2.

Other similar stories were proposed by teacher or children, and then the children were told that by-and-by they might play their number game with the number 8.

Now, we have no doubt that in teaching a young child to add and subtract small numbers, the use of objects for a little time at the outset is the simple and natural method, and that it is well to return in imagination occasionally to objective appli-

cations, after the objects themselves have been dispensed with. But observe. In the case before us, the children have been, we may assume, already made familiar with all the combinations involved in the smaller totals, 2, 3, 4, and so on up to 8. What we are unable to understand is what possible advantage is gained by the tiresome repetitions of "stockings," and "brown nuts," and "black birds," and so on from day to day and week to week. Our own experience has been that the average child very quickly learns to abstract the idea of numbers from that of any particular objects, and delights to perform his processes with the abstract number. Our doubt is whether the perpetual reference to objects is not a clog rather than a help to his progress. In fact, if such a thing were possible, we should fear that he would be in some danger of getting an idea that number is a concrete and special, rather than an abstract and universal notion, and that it may not necessarily have the same meaning in relation to some other unmentioned objects, which it has in relation to nuts and stockings and birds.

Again, we are quite unable to see what advantage is gained from the endless repetition of every noun and verb and other word in the "stories," or why children should not be permitted to avail themselves of the conveniences afforded by pronouns and elliptical forms of expression, as well as grown people.

An occasional exercise in the use of the full form of expression is no doubt helpful and desirable, but the constant use of such forms must become, one would think, unspeakably tiresome.

We are even so sceptical as to doubt the utility of trying to keep up a perpetual farce by turning everything into a "story" or a "play." Our own observation has been that children delight to feel that they are doing serious work, like grown people, and that it by no means adds to their enjoyment or willingness when we try to cheat them by calling their work play, or even by giving it the semblance of play.

One more remark we will venture with reservation. The theory generally adopted in primary work in arithmetic is, as we understand it, that the child is to learn at the outset, and by the methods indicated, all the combinations of smaller numbers that are included, for instance, in the number eight, and that having thus learned them they are to be made a part of his memory-stock to be used as such in all future processes. Query: Is not the thought-process, repeated as necessary and whenever necessary until it becomes almost automatic, preferable, educationally, to the memory-process, even in simple addition?

These observations are made tentatively, not dogmatically. "The beginning is half of the whole," and it is of great importance that these first systematic educational processes should be based on sound principles. We should be glad to hear from those who have thought on these points.

MORAL TRAINING IN THE SCHOOLS.*

THE longer we live, the more we observe and the more thought we give to the subject, the deeper becomes our conviction that the radical defect of our educational system is the want of systematic, persistent moral training in the schools. Canada, and the Province of Ontario in particular, are in special danger of serious moral deterioration from this cause, simply because we have carried the sound principle of separation between Church and State more nearly to its logical results, or rather to what have been very unnecessarily and illogically assumed to be its logical results, than most other countries. We have rightly concluded that the State cannot teach religion and must not be permitted to attempt to do so. But we have mistakenly inferred, in practice at least, that therefore morality or ethics cannot be systematically taught in the State schools. It is true that our teachers are enjoined to teach their pupils both good manners and good morals, but is there not reason to fear that very few of them effectively do so? They are expected to do this work "incidentally." They have neither time allotted for it in the courses, nor have they a text-book to aid those who are incompetent, as the majority no doubt, through no fault of their own, are, to deal with it properly without such aid. And, strange to say, the Education Department seems to think that because a former Superintendent made the serious mistake of attempting to introduce a kind of theological catechism, and the people would have none of it, they would also object to the use of a book of practical ethics, which, any one can see, is a very different thing. We do not mean to deny, of course, that all sound morality must be rooted in religion, but we do maintain that the fundamental principles of religion and the great practical duties growing out of these principles, such as, for example, the duties of honesty, truth, purity, unselfishness, etc., are so universally recognized in creed, if not in practice, that it is inconceivable that any respectable parent or guardian should object to have these duties impressed, day by day, upon the minds and hearts of his children.

* ETHICS FOR YOUNG PEOPLE. By C. C. Everett, Bussey Professor of Theology in Harvard University; Author of "The Science of Thought," etc. Boston: Ginn & Company, 1892.

If any one doubts the feasibility of having systematic and effective moral training imparted in the schools, without in the least trenching upon the sacred domains of the religious conscience, we should like to ask such a one to read the little work whose title is given below. We do not say that this book is the ideal text-book to be put into the hands of school children, though we believe that it would serve an excellent purpose, even in that capacity. For a text-book, pure and simple, it is not sufficiently inductive to suit our notions. But as a book full of information and suggestion for the help and guidance of the teacher, it is admirable. With it any teacher of average ability could hardly fail, as a large majority would fail without some such help, to make good use of a stated time which ought to be provided for in the time table, for the training of the conscience of the pupil. The simplicity of the style, the interesting character of the subject-matter, and, above all, the great importance of the subjects to which the attention is directed, render the book an excellent one to be put into the hands of young people everywhere. We could wish that a copy of it, or some similar work, might be read by every young man and woman in Canada. It might be found profitable, even by a great many who are no longer young.

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The Principles of Elementary Algebra. By Prof. N. F. Dupuis, M.A., F.R.S.C., of Kingston, Ont. Macmillan & Co.

PRELIMINARY NOTICE.

In the 336 pages of this handy volume Prof Dupuis, of Queen's College, has attempted to produce a stepping-stone by which the beginner in algebra may pass on to a higher stage. From the cursory reading we have been able to give the book up to date, we judge that it is one of those that aim more at practical utility than at originality. The student will find the exercises pretty well up to date, with a fair outfit of exercises that are not discouragingly hard. It covers the work for Junior Matriculation with Honors, and also most of the Pass work of first year at college. The style is concise and clear, and seems well fitted to reduce difficulties to a minimum. The book bears a certain individuality of its own, and is well bound and beautifully printed. C.

The Fundamental Principles of Chemistry. Practically Taught, by a New Method. By Robert Galloway, M.R.I.A., F.C.S. Longman, Green & Co., 1888.

Those who have never read Galloway's "Education, Scientific and Technical," have missed one of the strongest books on methods in science teaching. The present volume, 364 pp., follows the inductive plan and contains a fine collection of examples, illustrations, experiments, problems, tables, etc. The treatise is much superior to the High School Chemistry, and ought to be substituted for that strange conglomeration.

Columbus Day Exercises



PORTRAIT OF COLUMBUS.

Donated in 1882 to the Municipality of Genoa by the Sculptor Giambattista Cerasco.

CHRISTOPHER COLUMBUS.

It is hard for us to believe that at one time this America of ours did not contain a single white man; that only Indians roamed in scattered bands through its wildernesses and over its prairies. Yet until four hundred years ago no white man had ever seen or heard of America. The brave man who first led the way to the discovery of America, and thereby to the founding of the mighty nations that have arisen in this continent, was Christopher Columbus.

A very great and brave man, able by his resolution to rise from a lowly position in life, till he conquered even councils and kings to his plan. He was born—the son of a wool-comber of Genoa—about 1436. His boyish inclinations were in part towards geography and geometry, while the blue Mediterranean, which spread before his eyes, filled his imagination with dreams of voyages to distant and unknown lands. The attraction of the sea—what boy does not long to go to sea—soon swayed him. He sailed with various expeditions of commerce or war undertaken by his fellow-citizens—the Genoese. He even rose to obscure commands himself. But his ambition was wider than the Mediterranean.

Shipwrecked off Lisbon, he settled in that city, marrying there and supporting himself by making and selling charts and globes. Many a mariner came to his poor house in Lisbon to relate his adventures in perilous seas; many a story was told of unknown lands seen in distant latitudes. Marco Polo, a Venetian, had come back from the East with wonderful stories of the empires of India and China. In the mind of the obscure geographer rose the vision of a great deed. He would no longer try to reach the riches of the East by sailing eastward; he would mark out a new road. What mattered it that no man had ever dared to push out beyond the Azores, or that people believed that the unknown seas were filled with fearful perils; he would sail westward!

But ships and men for this unheard-of voyage—where was a poor geographer, who sold maps, to get them? Columbus went to the king of Portugal, John II., and besought the king to help him. The prince laid the project before a council, and the council declared it absurd and evil. His project rejected, his wife dead, poverty-stricken after years of waiting for royal assistance, Columbus set out on foot, leading his son Diego by the hand, to offer to Ferdinand and Isabella, king and queen of Spain, the design that Portugal rejected.

Passing near Palos, wearied with the hot and dusty road, he sought rest and food from the monks of La Rabida, in Andalusia. The prior, Juan Perez, an enlightened and pious man, sought conversation with the stranger, and was won by the

enthusiasm and genius of the traveller to a belief in his plans. He bestowed on him a mule and a purse of gold, introduced him to the confessor of Isabella; in short, all that a friend could do, Juan Perez did.

But Spain was endeavoring to get rid of the Moors, who had centuries before invaded and taken possession of many of its best provinces. How could they be troubled with hazardous and unprofitable expeditions suggested by a poor foreigner? The Queen believed in Columbus, but the King summoned a council to discuss his plans. It, like the council in Lisbon, decreed that his design was absurd and irreligious, contrary to science and the Bible. Years slipped away. In poverty Columbus followed the court from city to city, till at last, wearied with waiting and dejected in hope, he left Cordova to carry his plans to France. But first he returned to Palos and to his friend Juan Perez, who welcomed the unfortunate man with tears. Once more Perez befriended him. He prevailed upon him to wait till he could write and hear from the Queen herself. The prior even went to court, saw Isabella, and won her consent. But beggar as he was, Columbus demanded to be made ruler of the lands he discovered and to have a tenth of their revenues. Once more delay; Columbus set out for France. But he had conquered. Messengers overtook him; and on the 17th of April, 1492, the conditions, worthy of the magnitude of his design, were agreed upon. On the 3rd of August, with 120 men in three little vessels, of which only one was decked, Columbus sailed from Palos, westward!

Three weeks later the last known land of Europe—the Canary Islands—sank out of sight behind them, and they were alone upon the unknown, mysterious ocean. Peacefully the winds, day after day, blew them onward; the sight of tropical birds cheered their minds; unknown plants came floating on the waters, testimony of new lands. But no land appeared. The clouds that the pilots took for distant mountains disappeared in the morning sun. Provisions were half consumed. Terror seized the souls of all but the undaunted admiral. Day and night Columbus watched, holding in check the murmurs of his crew; but at last their murmurs became curses. They were being led to destruction by a madman; they threatened to bind him to the mast, and return to Spain. Three days more he begged them, three days, and then if there was no land, he would yield to their entreaties, give up the expedition won by a life of toil and endeavor, and return to Spain.

On the second of these three days, reeds floated by, a hewn plank, a bunch of hawthorn, and a bird's nest upon which the mother bird still sat. Everyone felt that land was near. That night, between the 11th and 12th of October, 1492, no one slept; the sails were furled, and in anxious suspense every eye was turned in the direction of expected land. Columbus at midnight walked the deck of his vessel, peering into the darkness. Suddenly he saw a gleam of light away in the horizon, now flashing and again lost to view. What feelings surged up in the admiral's mind! He called others to confirm it, but it disappeared, and Columbus was left a prey to hope and despair.

Suddenly the signal of Land! was fired by the cannon of the *Pinta*; Land! every voice exclaimed. With beating hearts they awaited the dawn. Little by little daylight came on, and out from the mist of morning rose an island, beautiful with its sandy shore, its lofty trees, and the blue summits of its distant hills. They saw, scattered here and there, in form like bee-hives, human dwellings.

Taking the flag of Spain in his hand, followed by the two Pinzons, his lieutenants, Columbus landed, fell on his knees, kissed the sand, wept, and praised God. In the name of Christ he baptized the island San Salvador. Though it is one of the Bahamas, Columbus believed it to be on the outskirts of India, towards which he thought himself sailing. He called the inhabitants Indians. The discovery of San Salvador was the first and greatest step in the discovery of America. Columbus proceeded on his way to new discoveries. He coasted along the beautiful island of Cuba, and landed in San Domingo, planting there a colony of forty men. But in a storm his vessel, the *Santa Maria*, was wrecked. The admiral escaped with his men to shore, where he was soon joined by the *Niña*. Eager now to carry to the Old World the news of his discoveries, Columbus with his two little ships, the *Niña* and *Pinta*, set sail for home.

But storm after storm beat upon the little barques as they approached the Azores. The vessels lost sight of each other in the darkness. Each believed the other lost. But at last the fury of the ocean was appeased. The admiral caught sight of the Azores, and, worn out by hunger and tempest, at last sailed into the Tagus, and was received royally by John II. But he burned to reach his own sovereigns, and on the 15th of March, 1493, amid the wild rejoicing of the inhabitants, he disembarked at Palos. Next day the *Pinta*, as well, came to port. At Barcelona, Ferdinand and Isabella gave the great discoverer an ovation worthy of his glorious services. Messengers were sent to all the courts of Europe to carry the tidings of new-discovered lands, and the fame of the great navigator.

Expedition after expedition was now undertaken. One, in 1493, discovered the Caribbee Islands and Jamaica. In another, in 1498, Columbus saw Trinidad and landed at Paria, on the coast of South America. But envy and ingratitude had seized upon men's minds after these great deeds. When Columbus landed in San Domingo, and endeavored to exercise the authority with which he was invested, he was met with resistance, thrown into prison, and sent home in chains. Nor, though he was liberated, could he obtain redress from the king. Still the spirit of discovery burned within him. His fourth and last expedition set sail for the New World in 1502, but the crew mutinied, and the expedition came to nought. Columbus returned to Spain in 1504. Isabella was dead; Ferdinand ungrateful. The old man asked for bread and they gave him a stone. For in poverty he died at Valladolid on the 20th of May, 1506, and the king raised to his memory a magnificent monument. His ashes now rest in the cathedral of Havana, Cuba. "The conqueror in his conquest."

But Fate not only robbed Columbus of the fruit of his work, it robbed him of much of its glory. A lieutenant of Columbus, and his devoted friend, Amerigo Vespucci, wrote a narrative of his own American voyages. This narrative found its way into Germany, and the name of its author gave rise to the term America, as the name of the lands that he had visited. Thus by a strange whim of fortune Columbus was deprived forever of the honor of having his name associated with the New World that he added to the Old.

All the traits of the truly great man, says Lamartine, were united in Columbus: genius, labor, patience, obscurity of lot conquered by native strength, a gentle but indefatigable obstinacy in the attainment of his design, resignation to the will of heaven, long premeditation in solitude, heroic execution of his thought in action, bravery and coolness in meeting the perils of storm and revolt, confidence in the star of humanity, disregard of personal safety as he plunged into that ocean filled with the terrors of the unknown; study without rest, knowledge as wide as the horizon of his times; a tact in ruling men, while by the greatness of his soul and the dignity of his person, he won them to his plans; an eloquence that convinced kings; the wisdom of a legislator and the gentleness of a philosopher; forgiveness of insults and injuries; piety, in a word, that virtue which embraces and glorifies all others when it is what it was in the soul of Columbus; the constant presence of God in his spirit, justice in his conscience, mercy in his heart, gratitude in success, resignation in defeat; worship always. Such was Christopher Columbus. F.H.S.

COLUMBUS' LANDING.

It was on Friday morning, the 12th of October, that Columbus first beheld the New World. As the day dawned, he saw before him a level island, several leagues in extent, and covered with trees like a continual orchard. Though apparently uncultivated, it was populous, for the inhabitants were seen issuing from all parts of the woods, and running to the shore. They were perfectly naked, and, as they stood gazing at the ships, appeared by their attitudes and gestures to be lost in astonishment.

Columbus made signal for the ships to cast anchor, and the boats to be manned and armed. He entered his own boat, richly dressed in scarlet, and holding the royal standard. As he approached the shore, he was delighted with the purity of the atmosphere, the crystal transparency of the sea, and the extraordinary beauty of the vegetation. On landing he threw himself on his knees, kissed the

earth, and returned thanks to God with tears of joy. His example was followed by the rest, whose hearts indeed overflowed with the same feelings of gratitude. Columbus, then rising, drew his sword, displayed the royal standard, and took solemn possession of the island in the name of the Spanish sovereigns, giving it the name of San Salvador.

The feelings of the crew now burst forth in the wildest transports. They thronged around the admiral, some embracing him, others kissing his hands. Those who had been the most mutinous and turbulent were now the most devoted and enthusiastic. Many of those who had outraged him by their insolence, now crouched at his feet, begging pardon for all the trouble they had caused him, and promising the blindest obedience for the future.

The natives of the island supposed that the ships had sailed out of the crystal firmament, beyond the horizon, or had descended from above on their ample wings, accompanied with lightning and thunder; and that these marvellous beings, clad in glittering steel, or raiment of various colors, were inhabitants of the skies.

Columbus supposed himself to have landed on an island at the western extremity of India, hence it and the adjoining islands were called the West Indies, and the natives, Indians, an appellation which has since been extended to all the aborigines of the New World.—*Washington Irving.*

THE VOYAGE.

BEHIND him lay the gray Azores,
Behind the gates of Hercules:
Before him not the ghost of shores,
Before him only shoreless seas.
The good mate said: "Now must we pray,
For lo! the very stars are gone.
Brave adm'rl, speak; what shall I say?"
"Why say, 'Sail on! sail on! and on!'"

"My men grow mutinous day by day;
My men grow ghastly, wan and weak."
The stout mate thought of home: a spray
Of salt wave washed his swarthy cheek.
"What shall I say, brave adm'rl, say,
If we sight naught but seas at dawn?"
"Why, you shall say at break of day,
"Sail on! sail on! sail on! and on!"

They sailed, and sailed, as winds might blow,
Until at last the blanched mate said:
"Why, now not even God would know
Should I and all my men fall dead.
These very winds forget their way,
For God from these dread seas is gone.
Now speak, brave adm'rl, speak and say—"
He said: "Sail on! sail on! and on!"

They sailed. They sailed. Then spoke the mate:
"This mad sea shows its teeth to-night;
He curls his lip, he lies in wait,
With lifted teeth, as if to bite!
Brave adm'rl, say but one good word:
What shall we do when hope is gone?"
The words leapt as a leaping sword:
"Sail on! sail on! sail on! and on!"

Then, pale and worn, he kept his deck,
And peered through darkness, ah, that night
Of all dark nights! and then a speck—
A light! a light! a light! a light!
It grew, a star-lit flag unfurled!
It grew to be Time's burst of dawn.
He gained a world; he gave that world
Its grandest lesson: "On! and on!"

—*Joquin Miller.*

CHRISTOPHER C——.

In the City of Genoa, over the sea,
In a beautiful land called Italy,
There lived a sailor called Christopher C——;
A very wise man for his time was he.

He studied the books, and maps, and charts.
All that they knew about foreign parts;
And he said to himself: "There certainly oughter
Be some more land to balance the water.

As sure as a gun, the earth is round;
Some day or other a way will be found
To get to the east by sailing west;
Why shouldn't I find it as well as the rest?"

The court philosopher shook his head,
Laughing at all that Christopher said;
But the Queen of Spain said, "Christopher C——,
Here is some money; go and see."

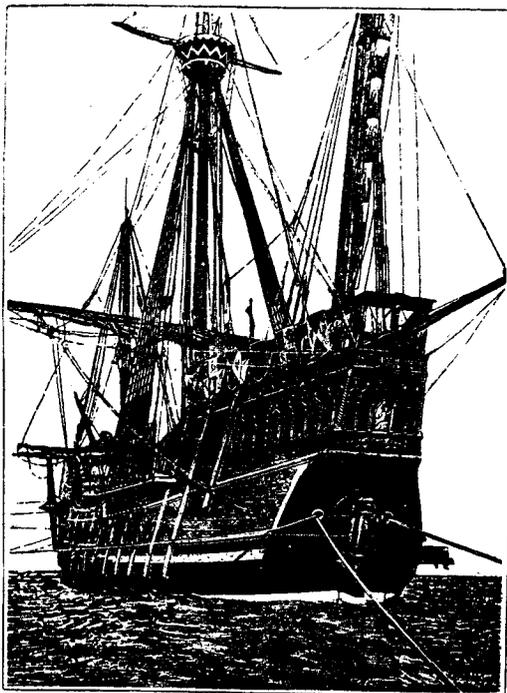
That is just what he wanted to do,
And in fourteen hundred and ninety-two,
From the port of Palos one August day,
This Christopher C—— went sailing away.

He sailed and sailed with wind and tide,
But he never supposed that the sea was so wide,
And the sailors grumbled, and growled, and cried,
"We don't believe there's another side.

"O, take us back to our native shore,
Or we never shall see our wives any more!
Take us right back, O Christopher C——!
Or we'll tumble you overboard into the sea."

In spite of their threats he wouldn't do it;
There was land ahead and Christopher knew it,
They found San Salvador, green and low,
And the Captain shouted, "I told you so!"

"This is the land King Solomon knew,
Where myrrh and aloes, and spices grew,
Where gold and silver, and gems are found,
Plenty as pebbles all over the ground."



THE CARAVAL OF COLUMBUS.
As Reconstructed for the Columbus Celebrations in
Spain and America.

They thought they had sailed clear round the ball,
But it wasn't the other side at all,
But an island, lying just off a shore
Nobody had ever seen before.

They planted their flag on a flowery plain,
To show that the country belonged to Spain;
But it never once entered Christopher's mind
That North America lay behind.

Then Christopher C——, he sailed away,
And said he would come another day;
But if he had stayed here long enough,
We should talk Spanish or some such stuff.
—*Young Idea.*

TO SPAIN

FAIR Genoa, deserving thy proud name
Of La Superba, in thy crown of fame
Shines thy Columbus as the brightest gem
Of all that deck thy ancient diadem.
The blue Tyrrenian sea yet loves thy shore,
Where as a boy Columbus dwelt of yore.
With free Italia thou long hast shared
Just pride in him, whose splendid courage dared
To cross the wide and pathless western deep

Through untold dangers steadfast course to keep,
Till Salvador's green isle burst on his gaze.
The nations heard with glad and deep amaze,
How he had pierced the ocean's mystery
And spread world-wide the Spanish Empery.

Hispania rejoice! 'Twas forth thy court
The orders came that sped from Palos Port,
Columbus on his quest; he won for thee
Another world. Through thy grand history,
No year more brightly shines than when he sailed
And to mankind San Salvador unveiled.

That same auspicious year also beheld
Thy Ferdinand and Isabella weld
Disjointed Spain into one glorious realm,
And all the Saracenic power o'erwhelm
Within thy bounds. Freedom from Paynim thrall
Thou didst attain when came Granada's fall.
The great discoverer's never dying name
Is linked for aye with thy inglorious fame.

—*From "Columbus," by Samuel Jefferson.*

THE FORERUNNER.

HEAVILY in his breast
The mariner's heart was beating;
Ever the course shaped west,
Ever the land retreating.

Mutiny muttering loud,—
Naught all his hoping, his dreaming,—
Suddenly out of the cloud
Wings were flashing and streaming.

Wings that told of the nest,
Told of the bough and the blossom;
Gave him the joy of his quest,
Kindled the heart in his bosom.

Promising land at last,
Circling over and under,
Fanning around his mast,—
What was the bird, I wonder?

Nothing the Genoese cared
Were it osprey or swallow,—
The gray sea-waste was dared;
Palm fringe and shore must follow.

Oh, when bleak skies break up,
With winds the blue bird is whirled in;
I drink from the self-same cup
The voyager pledged the world in.

For some of his joy must be
On the flash of the blithe new-comer,
Whose wings discover to me
Whole continents of summer.

—*Harriet Prescott Spofford.*

COLUMBUS AND HIS CREW.

THE situation of Columbus was daily becoming more and more critical. In proportion as he approached the regions where he expected to find land, the impatience of his crew increased. Columbus was not ignorant of their mutinous disposition, but he still maintained a serene and steady countenance, soothing some with gentle words, endeavoring to work upon the pride or avarice of others, and openly threatening the rebellious with punishment, should they do anything to hinder the voyage.

On the 7th of October, having observed great flocks of small field-birds going towards the south-west, and knowing that the Portuguese navigators had discovered most of their islands by following the flights of birds, Columbus determined to alter his course to the direction in which he saw the birds fly. For three days they stood in this direction, and the farther they went the more encouraging were the signs of land.

When, however, on the evening of the third day the crew beheld the sun go down on the shoreless horizon, they broke forth into turbulent clamor. They insisted upon turning homeward and giving up the voyage as hopeless. Columbus tried to pacify them with gentle words and promises of large rewards; but finding that they only increased in clamor, he assumed a decided tone. He told them it was useless to murmur; the expedition had been sent by the sovereign to seek the Indies, and hap-

pen what might, he was determined to persevere, until, by the blessing of God, he should accomplish the enterprise.

Columbus was now at open defiance with his crew, and his situation became desperate. Fortunately the proofs of land being near were such on the following day as no longer to admit of doubt. Besides a quantity of river-weeds, they saw a thorn branch with berries on it; then they picked up a reed, a small board, and, above all, a staff artificially carved. Gloom and mutiny now gave way to sanguine expectation. In the evening Columbus made an impressive address to his crew, and told them he thought it probable they would make land that very night.

At sunset they had stood again to the west, and were plowing the waves at a rapid rate, the *Pinta* keeping the lead from her superior sailing. Not an eye was closed that night. As the evening darkened Columbus took his station on the top of the cabin of his vessel, ranging his eye along the dusky horizon, and maintaining an intense and unremitting watch. About ten o'clock he thought he beheld a light glimmering at a great distance. Fearing his eager hopes might deceive him he called to a gentleman near him, and inquired whether he saw such a light; the latter replied that he did. They saw it once or twice afterwards in sudden and passing gleams, as if it were a torch of some fisherman, rising and sinking with the waves, or in the hand of some person on shore, borne up and down as he walked from house to house.

They continued their course until two in the morning, when a gun from the *Pinta* gave the joyful signal of land. It was now clearly seen about two leagues distant; whereupon they took in sail, and lay to, waiting impatiently for the dawn.—*Washington Irving.*

COLUMBUS.

MISS MINNIE CLARK, of Vanessa, sends us the following, saying: "I was glad to see, in the last number, an announcement that THE JOURNAL would help teachers to celebrate the landing of Columbus. Before seeing the notice, I had composed a few verses for my little ones of the Second and Part Second Book classes, to recite on that day. There are thirteen stanzas, and each child is supposed to recite one stanza, the children being arranged so that the tallest stands in the middle. I do not presume to write poetry, but if you think these verses would be a help to any teacher, you are free to publish them." The story is simply and clearly told in these lines, and no doubt they will be found helpful:

COLUMBUS from Genoa came,

In Italy's sunny land;
He tried to teach the people things
They could not understand.

Columbus said the Earth was round,
And so we know to-day,
The people then said it was flat,
And on a turtle lay.

This wise man said that other lands
Must lie in the western sea;
The people called him a foolish man,
And said this could not be.

At last he went to the land of Spain,
And visited good Queen Belle;
She gave him money to build some ships,
When his story he did tell.

Columbus built three funny ships,
Then his hundred and twenty men
Bade sorrowing friends a sad farewell,
For they ne'er might meet again.

When the seamen saw that all the time
The wind from the East did blow,
They feared that to their own fair land
They never more could go.

They said, "Let's throw him overboard,
And then return to Spain."
But Columbus said, "If no land we see,
In three days, we'll home again."

The sailors saw a birdie's nest
On a broken branch at sea,
And then they said with a happy shout,
"We near the land must be!"

At two o'clock in the morning,

On the third day, Columbus said,
He thought he saw a little light
O'er the waters, just ahead.

And soon the gun was fired,
And the sailors shouted "Land!"
Strange land it was, for savages
Under the trees did stand.

These simple red men wondered
What those white wings could be,
They thought they'd come from Heaven,
And fallen into the sea.

And then the seamen landed
And stood upon the strand,
While Columbus offered thanks to God,
For bringing them safe to land.

This beautiful little island
No white man had seen before;
Columbus cried, "'Tis good Queen Belle's!"
And called it "San Salvador."

COLUMBUS' PERSONAL APPEARANCE.

COLUMBUS was of a powerful frame and large build; of majestic bearing and dignified in gesture; on the whole well formed; of middle height, inclining to tallness; his arms sinewy and bronzed like wave-beaten oars; his nerves high strung and sensitive, quickly responsive to all emotions; his neck large and his shoulders broad; his face rather long and his nose aquiline; his complexion fair, even inclining to redness, and somewhat disfigured by freckles; his gaze piercing and his eyes clear; his brow high and calm; furrowed with the deep workings of thought. In the life written by his son Ferdinand we are told that Columbus not only sketched most marvellously, but was so skilful a penman that he was able to earn a living by engrossing and copying. In his private notes he said that every good map-draftsman ought to be a good painter as well, and he himself was such in his maps and globes and charts, over which are scattered all sorts of cleverly drawn figures. He never penned a letter or began a chapter without setting at its head this devout invocation: "*Jesus cum Maria sit nobis in via.*" Besides his practical studies he devoted himself to astronomical and geometrical researches. Thus he was enabled to teach mathematics, with which, as with all the advanced knowledge of his time, he was conversant, and he could recite the prayers and service of the Church like any priest of the altar. He was, as I have already said, a mystic and a merchant, a visionary and an algebraist. If at times he veiled his knowledge in cabalistic formulas and allowed his vast powers to degenerate in puerile irritation, it was because his own age knew him not, and had dealt hardly with him for many years—from his youth until he reached the threshold of age—without taking into account the reverses which darkened and embittered his later years. Who could have predicted in him, in the midst of the blindness that surrounded him, that there in Spain, and in that century of unfading achievement, the name of Columbus was to attain a fame and unspeakable renown? There are those who hold that this was the work of chance, and that the discovery of America was virtually accomplished when the Portuguese doubled the Cape of Good Hope. But I believe not in these posthumous alterations of history through mere caprice, nor in those after rumors of discoverers who died in obscurity.—*Selected.*

THE ARRIVAL.

For hours Columbus kept
His anxious watch; the morning winds on swept,
All sail being shortened slowly drove his bark
Toward the west, where all the sky loomed dark.
Refreshing slumbers rarely close the eyes;
Awearied oft, Columbus stern denies
Himself the needed rest that nature craves,
But night by night he scans the heaving waves.
This memorable night o'er lonesome sea
The watch he keepeth most persistently.
Two hours are wanting now e're black midnight
Arrives; Columbus strains his aching sight
In longing gaze for some outline of land.
But see! Columbus grasps with firm set hand
The bulwark of the prow; rigid as death
His tall form towers erect, he holds his breath

While gazing earnestly towards the west.
His face is forward through the darkness pressed
All motionless, as if in deep amaze,
And all his life were centred in the gaze.
"Tis so, indeed!" with fated breath he spake,
"A flashing light doth through the darkness break.
Some torch methinks! It is no meteor's light
That doth illumine the brow of ebon night!
It moveth slowly there! towards the left,
Now is my vision of the beam bereft!
The bearer hath into some dwelling passed!
Here land, inhabited, we reach at last!"

This gladsome morn
Atones for all the hardships longtime borne;
'Tis threescore days and ten ago since Spain
By them was left; week after week the main
Hath tossed around them drearily, while they
Have ploughed, all wearily, the watery way,
While waves interminable heaved around;
What rapture now to reach the firm-set ground,
To gaze on fertile vales and wooded hills
To list the murmuring sound of sparkling rills.

As o'er the intervening wave swift glide
The boats, the natives flee the shore to hide
Within the woods. The prows soon greet the
strand,

Columbus leapeth first upon the land,
Falls on his knees, kisses the long sought ground;
The guerdon, after wearying toils now found;
Then, rising, plants the royal flag of Spain,
There claims for it, nor claimeth he in vain
The widespread region of the Golden West
That now rewards his long and daring quest,
Those lands o'er which as Viceroy he shall reign,
The goal desired he doth at last attain.

—From "*Columbus*," by Samuel Jefferson.

THE EMBARKATION OF COLUMBUS.

On August 2, 1492, everything was ready, and the crew were notified to embark, to await the uncertain moment when a favorable wind should permit the little fleet to set sail. Nothing so befitted that solemn hour as a votive procession from the caravels to the monastery, to which the eyes of the mariners turned as to a spiritual beacon, brighter than any that flared along the headlands. This pious duty performed, the crew returned on board the caravels, where they patiently waited the order to sail, while Columbus retired to the monastery eagerly to watch for a favoring wind.

Columbus kept all sail on his caravels during the night of August 2nd. The old salts of the crew looked for a favoring wind at starting, and Columbus' eager watchfulness was not to pass unrewarded. From the height on which La Rabida stood, he scanned sea and sky with steadfast gaze, like one of those seabirds, presagers of changes of wind and weather, clinging to the scarred and storm-beaten cliff. About three in the morning, while the stars yet twinkled in the skies, and all earth slumbered, the awaited breeze sprang up, bringing new life to the discoverer's veins and quickening the throbbing of his heart. The pines murmured as though hymning the dawn, and the waters rippled as though heaving with the breath of love and hope. Columbus awakened Padre Juan, and he in turn the child Diego, and the three repaired to the chapel in quest of heavenly and religious solace for the approaching pangs of separation and for the fateful voyage. As in the boundless ether shine the stars, so the lamps flickered in the little church, lighting with their rays alike the courses of ocean and the pathways of the soul. The monk put on his priestly vestments, and celebrated the holy sacrament at the high altar, before the taper-lighted Virgin. The hour was come, and Columbus resolutely descended to the shore, plucking himself away from embraces that held him to land like some deep-rooted oak, for the sail-wings were ready to bear him to the realm of sea and sky. He soon reached the wharf, and as the dawn broke in the east the flag-ship majestically ran in shore to take the new Argonaut on board. The fluttering sails, the hurried manœuvres of the crew, the boatswain's whistle, and the cries of the sailors as the ships got under way, announced a speedy departure, and attracted the early-risen villagers to the shore in their natural desire to witness the scene, and to bid farewell to departing friends and loved ones. When Columbus sprang from the skiff, on board the caravel, and the anchors were weighed, a shudder ran

alike through the departing sailors and the leavetakers on the strand. Where they were going they knew, but as their westward course, after leaving Cadiz and the Canaries, was to take them far beyond those lately won islands, none knew whither they were bound or the duration of the voyage. The cross floated above the flag-ship, which bore seaward toward the unknown, seeking mysteries perchance impenetrable and inaccessible to the human mind, and unconquerable by human will.—*Emilio Castelar, in August Century.*

School-Room Methods.

MISS PLANWELL AT THE TEACHERS' MEETING.

BY AGNES STOWELL, PASADENA, CAL.

FIFTEEN minutes after the close of school saw the teachers assembled in Mrs. Principal's office, ready in body and mind for the meeting.

Just to sit in that office was in itself a means of rest and education. It was no stereotyped "School Office," with its big revolving chair, littered desk, and a row of straight backed chairs on which the bad boys sent to the office squirmed and kicked, while awaiting an interview with the educational chief. No, the proper furnishing of this room was too good an opportunity to give the pupils an idea of decorative possibilities, for Mrs. Principal to let slip. One really fine etching, a few photogravures, and some photographs of works of art, were hung at proper height and distance on the walls, a few rugs partly covered the floor, light, graceful chairs, pretty, yet cheap, mantel and window draperies, etc., etc., made at little expense, (save the etching) a charming, restful room, and one which might be copied in detail by many of the pupils, whose only idea of a parlor was a room furnished by a cheap velvet set, three mantel vases, and a picture of something or other in a gilt frame.

"Now, Miss Planwell," said Mrs. Principal, "tell us how you use poetry in your reading work."

"O, you saw the reading lesson underneath the curtain," said Miss Planwell. "I wanted to strengthen the impressions the children were getting about the peaceful, drowsy quietness of that 'old green garden,' of which I had been reading them. I wanted to utilize to the utmost, the mental activity aroused by the enjoyment in the poem. So in the supplementary prose reading I have them meet again some of the new words in the poem. In the little lesson which you saw underneath that curtain, was a talk between a brother and sister about the old green garden being a pleasant place for mamma to rest and take her afternoon nap, and how baby might like to sleep there, too."

"Yes, Mrs. Principal, there is great danger in spoiling the poetical flavor by a supplementary prose reading lesson, which is written for the sole purpose of giving additional reading work. Unless I can write a poetical, thoughtful bit of prose to supplement a poem, I don't write it. The appreciation of the poem will carry all else with it. 'Seek ye first' the higher things, and the lesser things will be added thereto, applies here."

After reading a poem, I usually consent to place it on the board (my children regard it as a favor), so it may be copied into the books they keep to show their mothers.

"Those blessed 'Mothers' Books' are such a help in our reading work. You see that, as a usual thing, they are only permitted to write in them when they have finished all the work given by me. Then they write—!"

"I never ask to see those books, but you may be sure they are shown to me, and, as this is entirely a labor of love, you may again be as sure that but little careless work is done. As these books are taken home, read and re-read by their faithful compilers, I am always certain that all the words of any poem copied into a 'Mother's Book' will be well learned."

"At first they used to copy into them words or sentences, the writing or the reading of which had been complimented by me, and the first few pages were somewhat as follows:

sister catch has
O see the crab!
I can see his peg eyes.
Yes, mamma, I will take good care of brother,
etc., etc.

"Now, most of the books have really quite a literary flavor. As I read them only poems of literary worth, only that which is beautiful appeals to them. As they are very anxious to read the entire poem to mamma, in the majority of the books they are careful to finish one poem before beginning another. Some of my little plodders will use their spare time during an entire week for that purpose."

"Of course if they were not eager to do this copying, some for the real love of the work, some for the praise, and others—well—to escape being out of fashion, (for 'Mother's Book' is the fashion with my young people), I would be obliged to give more drill on the new words introduced into our poetry lessons. But now they, like the words introduced in our Science work, take care of themselves, provided the pupils really feel an interest in that which the words represent."

"I am also very careful not to persuade my pupils to appear more interested in my selections, or more refined in their taste than they really are, but wait for the real honest growth which I am sure will come. For instance, the first of the term I read them 'The Cow,' by Robert Louis Stevenson. I quote the first stanza:

'The friendly cow all red and white,
I love with all my heart,
She gives me cream with all her might,
To eat with apple tart.'

"They enjoyed that very much, and most all of my class smiled rapturously when I read,

'She gives me cream with all her might,
To eat with apple tart,'

and begged to hear it again and again for the joy of those lines. Now they really prefer Mary Howitt's, 'Mabel on a Midsummer Day,' Charlotte Young's 'Evening,' or Hogg's 'A Boy's Song.'

"Have you found any poem, Miss Planwell, so simple that first or second year pupils could read at sight?" said Mrs. Principal.

"Yes, I have found a few. William Blake's 'Little Lamb' is simple and beautiful, and was enjoyed by my young people, as was also a poem that Miss Margaret Schallenberger recommended to us—George Cooper's 'Only One,'

'Hundreds of stars in the pretty sky;
Hundreds of shells on the shore together;
Hundreds of birds that go singing by;
Hundreds of bees in the sunny weather;
Hundreds of dew drops to greet the dawn;
Hundreds of lambs in the purple clover;
Hundreds of butterflies on the lawn—
But only one mother the wide world over!'

"There is much more in that than mere learning to read," softly said the gentle, black-robed little substitute.—*Popular Educator.*

A GRAMMAR LESSON.

Teacher—Note what this pencil does when I let go of it. (Teacher lets it fall.)

Pupil—It falls.

Tr.—What falls?

P.—The pencil.

Tr.—Now make the whole statement. (The teacher lets the pencil fall again.)

P.—The pencil falls.

Tr.—What is the thing we are thinking about?

P.—The pencil.

Tr.—That which we think about we call the subject. Tell me something that barks; that roars; that whines; that cackles; that screams; that whines; etc. (Teacher writes these sentences on the board as given.)

Tr.—Now what is the subject of the first sentence? Of the second? etc. (Teacher underscores all the words that are used to make the entire subject. See to it that the children regard the thing they are thinking about as the subject, and that they use all the words that are used in the sentence to express this thing.)

Tr.—Now tell me what hangs on the wall (map), what stands in the corner (stove); what flies in the air (birds); etc., etc. Write these sentences and have subject pointed out and underscored.

Tr.—What is the subject?

P.—It is that which we are thinking about.

Tr.—In all these sentences only one word in addition to a or the has been used to denote the thing we were thinking about. (Review them and let the children note this fact.)

Now, suppose we wish to say that the watch dog

barks; what words are used to denote the thing we are thinking about?

P.—The watch dog.

Tr.—Yes, it takes three words to denote the single thing we are thinking about. What, then, shall we call these three words?

P.—The subject of the sentence.

The teacher should first give numerous sentences such as "The hungry lion roars," "The savage wolf howls," "The frightened hen cackles," "The lonesome puppy whines," etc., etc., and have the children point out the group of words that denote the subject.

Then have the pupils say things about particular objects requiring a group of words to denote each one.

Then let prepositional phrases be introduced with adjectives to point out more definitely the object which all are thinking about. The point in all this is to practice the child in seeing that while he is thinking of but one object it may take a large group of words to denote in language what that object is.

Then let the pupils practice finding the entire group of words that denote the subjects in the sentences in their reading lessons and elsewhere. Hold on to this point until the children can set off the words that denote what is being thought about in all simple and easy sentences. Even modifying clauses may be introduced into the subject provided the children see that they make the object of which they are thinking more definite to another person to whom they are trying to express it.

Our contention is that it is all important that the children keep their minds clear on the point that the thing they are thinking about may require a large group of words to express it so that another person will know it by the description they give. The subject is only one thing, but the words that express it may be many.

The teacher will see, also, that in dwelling upon this matter of separating the subject from the rest of the thought the child is unconsciously discovering many of the functions of words, phrases, and clauses in the sentence. Later, when his attention is called to this specifically, he will find it to be something he already knows. In fact, every subject in its elementary stages should be so taught that there is an unconscious use of ideas which it is the purpose of the study to subsequently bring into consciousness.

The teacher will see, too, that a continued drill on discriminating the group of words that make the subject, is at the same time an unconscious study of what constitutes the predicate. It will be easy to teach the child to point out the predicate, therefore, when he can point out the subject.

The art of teaching is skilfully performed when, at every step, the child discovers knowledge that he had been using unconsciously, coming up into consciousness. He feels that he has known it all the time. He says, "I always knew that." Sometimes he says this when the teacher is boring him with things that he has always consciously known. But when first the unconscious or semi-conscious comes up into consciousness there is a shock of surprise that gives great pleasure. The teacher must learn to so conduct the pupil that these shocks will be felt all along the line.—*G. P. B., in the Public School Journal.*

PROF. DEWITT HYDE, in the *Journal of Education*, says that the old ideals of American education, the ecclesiastical ideal of an education which should provide a learned clergy; the political ideal of an education which should insure an intelligent suffrage; the industrial ideal of an education which should be a means to the earning of a better living—are all becoming absorbed in the spiritual ideal of an education which shall develop a systematic manhood and womanhood, and fill the life of man with intellectual interests and rational delights. The educational system which shall realize this ideal is not a flat surface on which subjects arrange themselves by caprice or accident. It is a sphere in which the relation of each department to every other is determined by necessary laws. The diagram consists of seven concentric circles, representing the seven stages of education, the nursery, the kindergarten, the primary, grammar, and high schools, the college and the university. Each circle is divided into eight arcs, representing the eight departments of training, language, literature, mathematics, science, physical culture, art, history and philosophy.

Mathematics.

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

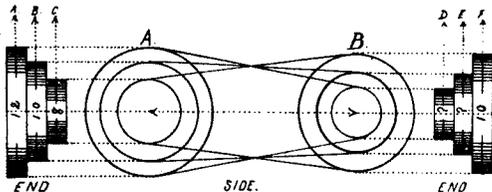
CORRESPONDENCE.

A. U. asks for solutions of questions 138 and 140, p. 273, Hamblin Smith's Arithmetic.

J. C. H. asks for an example or illustration of the definition of multiplication as given in the Pub. Sch. Arith. — "Multiplication is the operation by which we find a number which is equal to a given number whose unit is itself a number." Example, $4 \times 3 = 12$. The meaning is that we find a collection of units, 12, equal to a given collection of units, 3, each of the latter units being a group of 4 single units. Perhaps a diagram will give the best translation of the perfectly definite idea intended by the definition. Thus: — Given $(1+1+1+1)+(1+1+1+1)+(1+1+1+1)$, to find $1+1+1+1+1+1+1+1+1+1+1$. In the given line we count by 4's and have only 3 units, in the product we count by 1's and have 12 units.

The following is from Kippin Way, and explains itself. Will some one endeavor to oblige our friend by sending in a convenient formula?

A and B are two cone pulleys so constructed that when a belt is made to fit on a and on d, it will also fit b and e, also c and f. If a is 12 in., b



10 in., c 8 in., and f 10 in. in diameter, it is required to find the diameters of d and e, so that the belt will not have to be changed in length. The pulleys are placed any distance apart. Please give as simple a formula as possible.

W. S. HOWELL, Sombra, sends this solution of No. 47, p. 62: — Let x = divisor, z = dividend, y = quotient, and d = difference between divisor and remainder. Then, $z + d = x(y + 1)$. Hence x is a measure of z + d. Find all the divisors of z + d that exceed d. All such measures x, x_1, x_2, x_3 , etc., will divide z, leaving a remainder that is d less than the divisor x. Thus 2547346 is divisible by 36 divisors of which 3000 is the least and 1275000 the greatest, all giving a remainder less than the divisor used.

By MR. HOWELL. — Find seven different right-angled triangles in whole numbers having 24 as base, and give a general formula.

We wish to acknowledge at this late hour the solutions to Nos. 83, 84 and 86 of the April No., 1891, which were sent by E. KESNER, Hall Valley, Colorado, but were accidentally mislaid at the time, and only now rediscovered.

MR. R. C. WILMOTT, Cobourg, sends a communication on the relation of the pyramid and the sphere. The support which this column receives from correspondents is very cheering, and is highly appreciated. Many thanks to all kind friends of THE JOURNAL.

SECOND CLASS ALGEBRA

(For Questions see Examination Papers)

SOLUTIONS BY THE EDITOR.

1. REDUCING the numerical coefficients, and using these only for the operation, we have: —

$$1 + \frac{3}{2} + \frac{3}{8} - \frac{1}{18} + \frac{1}{27} - \dots$$

$$1 - \frac{1}{2} + \frac{3}{8} - \frac{5}{18} + \frac{3}{27} - \dots$$

$$1 + \frac{3}{2} + \frac{3}{8} - \frac{1}{18} + \frac{1}{27} + \dots$$

$$- \frac{1}{2} - \frac{3}{8} - \frac{5}{18} + \frac{1}{27} - \dots$$

$$+ \frac{3}{8} + \frac{3}{18} + \frac{1}{27} + \dots$$

$$- \frac{5}{18} - \frac{3}{27} - \dots$$

$$+ \frac{3}{27}$$

$1 - x$ is the product, all other terms cancelling.

2. The factors of $a^3 - b^3 + c^3 + 3abc$ are $a - b + c$, and $a^2 + b^2 + c^2 + ab + bc - ca$; hence the factors of

$$\frac{x^3}{y^3} - \frac{1}{y^3} + 1 + 3\left(\frac{x}{y}\right)\left(\frac{1}{y}\right) \text{ (1) are}$$

$$\frac{x}{y} - \frac{1}{y} + 1, \text{ and } \frac{x^2}{y^2} + \frac{1}{y^2} + 1 + \frac{x}{y} + \frac{1}{y} - \frac{x}{y}$$

Thus the required quotient is $\frac{x}{y} - \frac{1}{y} + 1$.

3. (a) Write y for $x^2 + x$ and we get $(y - 2)(y - 12) = (x + 2)(x - 1)(x - 3)(x + 4)$

$$(b) a(b^3 - c^3) + b(c^3 - a^3) + c(a^3 - b^3) = (a + b + c)(a - b)(b - c)(c - a)$$

4. Taking out the common factor 3, we get the coefficients: —

$$A = 2 + 5 - 2 + 3; B = 3 + 2 - 17 + 12. \text{ And}$$

$$4A - B = 5x^2 + 18x + 9 = (5x + 3)(x + 3). \text{ Also}$$

$$3A - 2B = 11x^2 + 28x - 15 = (11x - 5)(x + 3);$$

$$\therefore \text{H.C.F.} = 3(x + 3).$$

5. Each fraction may be divided into two, thus we have: —

$$- abc \left\{ \frac{1}{(a-b)(c-a)} + \text{etc.} \right\} - d \left\{ \frac{bc}{(a-b)(c-a)} + \text{etc.} \right\}$$

$$\therefore \text{Numerator} = 0 - d \{ -(a-b)(b-c)(c-a) \}; \therefore \text{Sum} = d.$$

$$6. \text{ Any one of the fractions} = \frac{1+m+n}{2(1+m+n)} = \frac{1}{2}$$

$$\therefore \text{sum of the three inverted} = 6$$

$$= \frac{m}{1} + \frac{n}{1} + \frac{1}{m} + \frac{1}{m} + \text{etc.} = \left(\frac{m}{1} + \frac{1}{m} \right) + \text{etc.}$$

$$7. \begin{array}{r} 1|1+0+0+5-3+0|+4-1 \\ +1|1+1+0+4+1|-3 \\ -1|-1-1+0-4|-1+3 \\ \hline 1|1+0+4+1-3|+0+2 \end{array}$$

Ans. — 2.

8. If the side of the larger of the two inner squares = mx, then the side of the smaller of the two inner squares = x,

$$\text{and the side of the whole square} = mx + x;$$

$$\text{and its area} = m^2x^2 + 2mx^2 + x^2.$$

$$\text{But } 2m^2x^2 = a^2 \text{ from the problem}$$

$$\therefore m^2x^2 = a^2/2; 2mx^2 = a^2/m; x^2 = a^2/2m^2.$$

Hence the required area

$$= a^2 \left(\frac{1}{2} + \frac{1}{m} + \frac{1}{2m^2} \right) = \frac{a^2}{2m^2} (m+1)^2.$$

$$9. \text{ If } x + y = 1, \text{ then } x^2 + y^2 = 1 - 2xy$$

$$\text{and } x^3 + y^3 = 1 - 3xy$$

$$\text{Difference} = xy.$$

$$10. \text{ Given } a - 1 = mb - m$$

$$\text{and } a + 1 = nb + n, \text{ to find } \frac{a}{b}$$

$$\text{we have } b = \frac{m+n-2}{m-n}; a = \frac{2mn-m-n}{m-n} \quad b$$

eliminating first a and then b

$$\therefore \frac{a}{b} = \frac{2mn-m-n}{m-n}$$

$$11. \text{ Expression} = \frac{\sqrt{3} - \sqrt{2} + 1}{2\sqrt{2}} + \frac{\sqrt{6} - 2 + \sqrt{2}}{2}$$

$$12. x^3 + \frac{r}{2} = \left(\frac{r^2 - q^3}{4} - \frac{q^3}{27} \right)^{\frac{1}{3}}$$

$$\therefore x^6 + rx^3 = -\frac{q^3}{27}; \text{ or } x^6 + rx^3 + \frac{q^3}{27} = 0$$

13. $a(a-c) + c(x-c) + x(x-a) = (x-a)(x-c)$, by multiplying through by $(x-a)(x-c)(a-c)$; whence

$$x = (c^2 + 2ac - a^2)2c.$$

14. Let L = length of boat expressed in miles; then

$$\frac{L}{x+3} = \frac{18}{3600} \text{ hours}; \frac{L}{x-3} = \frac{30}{3600} \text{ hours}$$

$$\therefore \frac{x-3}{x+3} = \frac{3}{5}; \therefore x = 12, \text{ and } L = \frac{3}{5} \text{ mile} = 396 \text{ feet.}$$

$$15. x^2 - 3x + (6-u) = 0$$

$\therefore x = \frac{3}{2} \left\{ 3 \pm \sqrt{(4u-15)} \right\}$. Hence for all real values of x, 4u is not less than 15; i.e., u not less than $3\frac{3}{4}$.

$$16. \begin{array}{l} x. y. z. \\ (a) 5-6-7=13 \\ (b) 7+4+13=15 \\ (c) 6-7-9=17 \end{array}$$

$$(7a-6b) - 62 - 114 = 16 (d)$$

$$(2c-a-b) - 2 - 4 = 1 (e)$$

$$(d-31e) \quad 10z = -15;$$

$$\therefore z = -\frac{3}{2}; y = \frac{5}{2}; x = \frac{7}{2}.$$

17. From (1) and (2) we get

$$y = \frac{1}{17}(2b-3a); \text{ from (2) and (3),}$$

$$y = \frac{1}{70}(4b-3c);$$

$$\therefore 10a + 8b - 11c = 0.$$

$$18. \begin{array}{r|l} 1 & 1+10+0-76+113 & -96+60 \\ -3 & -3-21+45-33 & +80 \\ +6 & +6+42-90 & +66-60 \\ \hline & x^2+7x-15+11x-10x & \end{array}$$

$$19. \begin{array}{r} i | 1-5+6-6-2 \\ +2 | +2-6+0-12 \\ \hline 1 | 1-3+0-6-14=D \\ +2 | +2-2-4 \\ \hline 1 | 1-1-2-10=C \\ +2 | +2+2 \\ \hline 1 | 1+1+0=B \\ +2 | +2 \\ \hline 1 | 1+3=A \end{array}$$

20. (a) Book-work.

$$(b) 2x^2 + 10x + 12 = 2x^2 + 13x + 20$$

$$\therefore 2 + \frac{10}{x} + \frac{12}{x^2} = 2 + \frac{13}{x} + \frac{20}{x^2}$$

$$\therefore \frac{1}{x} \left(3 + \frac{8}{x} \right) = 0, \therefore \frac{1}{x} = 0, \therefore x = \infty;$$

$$\text{or, } 3x + 8 = 0, \therefore x = -\frac{8}{3}.$$

21. The square of each fraction

$$= \frac{2(x^2 + y^2 + z^2 + xy + yz + zx)}{(a-b)^2 + (b-c)^2 + (c-a)^2} \quad (A.)$$

= the product of any two fractions

$$= \frac{x^2 + y^2 + z^2 + 3(xy + yz + zx)}{(ab + bc + ca) - (a^2 + b^2 + c^2)}$$

$$= \frac{-(xy + yz + zx)}{a^2 + b^2 + c^2 - ab - bc - ca}; \text{ since } x + y + z = 0;$$

$$= \frac{-2(xy + yz + zx)}{(a-b)^2 + (b-c)^2 + (c-a)^2} \quad (B.)$$

Hence comparing A and B, the square of each fraction

$$= \frac{2(x^2 + y^2 + z^2)}{2\sqrt{(a-b)^2 + \text{etc.}}}, \text{ whence the required result.}$$

22. Divide through by z, and write m for

$$\frac{x}{z}, \text{ n for } \frac{y}{z} \text{ and we have}$$

$$a_1m + b_1y + c_1 = 0$$

$$a_2m + b_2n + c_2 = 0$$

$$a_3m + b_3n + c_3 = 0.$$

Solve the last two equations for m and n, and we get

$$m = \frac{b_2c_3 - b_3c_2}{a_2b_3 - a_3b_2}; \quad n = \frac{c_2a_3 - c_3a_2}{a_2b_3 - a_3b_2}$$

Substituting these values in the first equation and clearing of fractions, we have the result required.

23. Let 3x = distance from P to Q; b = B's rate

$$\therefore \frac{x}{a} - 1 = \frac{x}{b}; \text{ and } \frac{4x}{b} = \frac{2x}{a}$$

$$\text{whence } b = x = 2a; \text{ and } 3x = 6a.$$

24. Reducing to the standard form, we have $x^2(a^2q^2 + b^2p^2) - 2a^2b^2px + (a^4b^2 - a^4q^2) = 0$. If

$$\text{the roots are equal, we must have } 4a^4b^4p^2 - 4(a^2q^2 + b^2p^2)(a^4b^2 - a^4q^2) = 0;$$

or $a^2b^2 + b^2p^2 = a^2q^2$.

25. Subtracting, $x^2(a-c) - (a-c) = 0$
or $x^2 = 1$, $x = 1$, or -1

Substituting these values separately, we have
 $a+b+c=0$, or $a+c = -b$;
and $a-b+c=0$, or $a+c = +b$;
i.e., $a+c = \pm b$.

26. Let $x+y$ and $x-y$ be the required numbers;

$\therefore x^2 - y^2 = 2x = 4xy$

$\therefore y = \frac{1}{2}$; $x = \frac{1}{2}(2 \pm \sqrt{5})$

i.e., $x+y = \frac{1}{2}(3 \pm \sqrt{5})$; $x-y = \frac{1}{2}(1 \pm \sqrt{5})$.

Examination Papers.

EDUCATION DEPARTMENT, ONTARIO— ANNUAL EXAMINATIONS, 1892.

THE HIGH SCHOOL JUNIOR LEAVING AND UNIVERSITY
PASS MATRICULATION.

ALGEBRA.

NOTE.—Candidates for Matriculation take sections A and B. Candidates for the Junior Leaving take sections B and C.

1. Multiply

$$1 + \frac{3x}{2} + \frac{3x^2}{2.4} + \frac{3x^3}{2.4.6} + \frac{3^2x^4}{2.4.6.8} + \dots$$

By $1 - \frac{x}{2} + \frac{3x^2}{2.4} - \frac{3.5x^3}{2.4.6} + \frac{3.5.7x^4}{2.4.6.8} - \dots$

carrying the product to the term containing x^4 .

2. Divide $\frac{x^3}{y^3} + \frac{3x}{y^2} - \frac{1}{y^3} + 1$

By $\frac{x^2}{y^2} - \frac{x-1}{y} + \frac{x+1}{y^2} + 1$

3. Put each of the following into four factors:

(a) $(x^2+x)^2 - 14(x^2+x) + 24$.

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

4. Find the H.C.F. of $6x^3+15x^2-6x+9$ and $9x^3+6x^2-51x+36$.

5. Simplify $\frac{bc(a+d)}{(a-b)(a-c)} + \frac{ca(b+d)}{(b-c)(b-a)} + \frac{ab(c+d)}{(c-a)(c-b)}$.

6. If $\frac{1}{m+n} = \frac{m}{n+1} = \frac{n}{1+m}$, show that

$$\left(\frac{1}{m} + \frac{1}{n}\right) + \left(\frac{m}{n} + \frac{n}{m}\right) + \left(\frac{n}{1} + \frac{1}{n}\right) = 6.$$

7. Find the value of $x^7 + 5x^4 - 3x^3 + 4x - 1$ when $x^2 - x + 1 = 0$.

8. A point is taken on the diagonal of a square, and lines are drawn through it parallel to the sides of the square. Of the two squares thus formed the greater has its diagonal equal to a , and its area m times the other. Find the area of the whole square.

9. If the sum of two numbers is 1, their product is equal to the difference between the sum of their squares and the sum of their cubes.

B.

10. If the ratio of $a-1$ to $b-1$ is m , and that of $a+1$ to $b+1$ is n , find the ratio of a to b .

C.

11. Clear the fraction $\frac{1}{\sqrt{3} + \sqrt{2} - 1}$ of its surd denominator.

12. Express the relation

$$x = \left\{ -\frac{r}{2} + \left(\frac{r^2}{4} - \frac{q^3}{27} \right)^{\frac{1}{2}} \right\}^{\frac{1}{3}},$$

so as to be free from irrational symbols.

13. Find x from the equation

$$\frac{a}{(x-a)(x-c)} - \frac{c}{(a-c)(a-x)} + \frac{x}{(c-a)(c-x)} = \frac{1}{a-c}.$$

14. A river flows 3 miles an hour. A boat in going down the river passes a certain point in 18

seconds, while in coming up she requires 30 seconds. Find the length of the boat and her speed in still water.

15. Given $x^2 - 3x + 6 = u$, to find x , and to show that for real values of x , the function $x^2 - 3x + 6$ cannot be less than $3\frac{3}{4}$.

16. Solve the set, $5x - 6y - 7z = 13$,
 $7x + 4y + 13z = 15$, $6x - 7y - 9z = 17$.

17. If $2x - 3y - a = 3x + y - b = 4x - 2y - c = 0$, find the relation connecting a , b , and c .

C.

18. Divide $x^3 + 10x^2 - 76 + 113x^{-1} - 96x^{-2} + 60x^{-3}$ by $x + 3 - 6x^{-1}$.

19. Find the values of A , B , C , and D that will make $x^4 - 5x^3 + 6x^2 - 6x - 2$ identically equal to $(x-2)^4 + A(x-2)^3 + B(x-2)^2 + C(x-2) + D$.

20. (a) Prove that adding the same quantity to both parts of a fraction brings the fraction nearer to unity.

(b) Find both roots of the quadratic

$$(2x+6)(x+2) = (x+4)(x+2) + (x+3)(x+4).$$

21. If $\frac{y+z}{b-c} = \frac{z+x}{c-a} = \frac{x+y}{a-b}$, show that each

fraction is equal to

$$\sqrt{\frac{x^2 + y^2 + z^2}{(b-c)^2 + (c-a)^2 + (a-b)^2}}$$

22. If $a_1x + b_1y + c_1z = a_2x + b_2y + c_2z = a_3x + b_3y + c_3z = 0$, show that $a_1(b_2c_3 - b_3c_2) + b_1(c_2a_3 - c_3a_2) + c_1(a_2b_3 - a_3b_2) = 0$.

23. A starts to go from P to Q and back again without stopping. One hour later B starts on the same course. B passes A at one-third the distance from P to Q, and meets A at one-third the distance from Q to P.

If A goes a miles an hour, find B's rate, and the distance from P to Q.

24. Given $\frac{x^2}{a^2} + \frac{b^2}{q^2} \left(1 - \frac{px}{a^2}\right)^2 = 1$, a quadratic in

x , to find the simplest relation amongst the constants when the equation has equal roots.

25. If the quadratics $ax^2 + bx + c = 0$ and $cx^2 + bx + a = 0$ have one root in common, show that $a+c = \pm b$.

26. Find two quantities such that their product, their sum, and the difference of their squares are all equal.

(Concluded from last issue).

C.

8. (a) Give an account of the character and life of Pericles.

(b) Describe succinctly the supremacy of Athens as to (1) political power, (2) trade and commerce, (3) literature and art, during the so-called "Age of Pericles," (B.C. 465-429). Enumerate the great Athenians that flourished during this period and briefly mention what they did to make the Age of Pericles one of the most brilliant epochs in the world's history.

(c) Sketch briefly the causes which, after Pericles' death, operated to bring about a rapid decline in the greatness of Athens.

9. (a) Give an account of the character of the government of Augustus (B.C. 31—A.D. 14) specifying what he did (1) to secure permanency and strength in his position as chief of the empire; (2) to secure an unopposed and authoritative administration of affairs both in Rome and throughout the empire.

(b) Give some account of the condition of the people of Rome under Augustus as regards (1) their political condition, (2) their morals and social life, (3) their religion.

(c) Describe very briefly the literary activity of Rome during the time of Augustus, mentioning some of the writers and writings that contributed towards making it famous as the "Augustan Age" of Latin literature.

D.

10. Describe and locate geographically, and write notes descriptive of the historical importance of any twelve of the following:

- (1) Plataea (B.C. 479). (2) Delos (B.C. 477).
- (3) Potidæa (B.C. 432). (4) Syracuse (B.C. 413).
- (5) Mantinea (B.C. 362). (6) Beneventum (B.C.

- 275). (7) Trasimene (B.C. 217). (8) Zama (B.C. 202).
- (9) Corinth (B.C. 146). (10) Philippi (B.C. 42).
- (11) Londonderry (1689). (12) Utrecht (1713).
- (13) Yorktown (1781). (14) St. Vincent (1797).
- (15) Corunna (1809). (16) Niagara (1759).
- (17) Newark (1792-97). (18) Queenston (1812).
- (19) Quebec (1864). (20) Batoche (1885).

11. (a) Enumerate and give the geographical location of the territories that acknowledged the rule or leadership of (1) Athens, (2) Sparta, at the beginning of the Peloponnesian War.

(b) Enumerate and locate the regions comprised within the Roman Empire at the Birth of Christ, using in your answer, as far as possible, both the ancient names and their modern equivalents.

THE HIGH SCHOOL PRIMARY.

HISTORY AND GEOGRAPHY.

Examiners: W. J. ALEXANDER, Ph.D.
J. E. BRYANT, M.A.
F. H. SYKES, M.A.

NOTE.—Candidates will take section A, any two questions of section B, and any two questions of section C; that is, six questions in all.

A.

1. Write short descriptive and explanatory accounts of

- (a) The North-West Rebellion of 1885;
- (b) The Washington Treaty of 1871;
- (c) The Founding of the Public School System of Ontario under Egerton Ryerson;
- (d) The Quebec Act of 1774.

2. Give as full an account as you can of the causes which operated to bring about the British North America Act of 1867, and of the constitutional settlements effected by the Act, both as regards the Provinces and the Dominion.

B.

3. Sketch very briefly the character, life, and reign of any three of the following rulers of England, particularizing only those acts or events which are of considerable historical importance:

- (a) King John. (c) King James I.
- (b) King Henry VII. (d) Oliver Cromwell.

4. Write short notes upon any eight of the following historical characters, describing very briefly what these men did, or tried to do, for the benefit, honor, or renown of England:

- (a) Stephen Langton, (b) Simon de Montfort, (c) John Wiclif, (d) William Caxton, (e) Sir Francis Drake, (f) Sir John Eliot, (g) Sir Harry Vane, (h) Robert Blake (admiral), (i) Charles Montague, (j) John Wesley, (k) William Wilberforce, (l) Horatio Nelson.

5. Give some account of

(a) The more important Acts passed by the British Parliament since 1869;

(b) The difficult governmental problems confronting English statesmen to-day and needing settlement.

6. Give a short account of the Indian Mutiny of 1857-8, with a statement as full as you can of its causes and its results. Describe the improvements effected in the political, social, and material condition of India since the mutiny.

7. Describe as fully as you can the political, social and commercial reforms effected or attempted by Canning, Peel, and Huskisson, 1822-7.

C.

8. (a) Explain fully what is meant by Longitude and Latitude as geographical terms, and show how Longitude and Latitude are measured. In illustration of your answer explain fully what is meant when we say that the Observatory of Toronto is situated in Longitude 79° 23' 38" west, and in Latitude 43° 39' 35" north.

(b) Explain what is meant by Solar Time. Show how the solar time of any particular place on the earth's surface (as for example, Toronto) is determined. Show also where places must be situated to have the same solar time as that of Toronto, and where places must be situated to have a solar time differing from that of Toronto by one hour, two hours, three hours, etc.

(c) Describe what is meant by Standard Time in North America. When it is twelve noon by

Standard Time in Toronto what o'clock is it at Greenwich, England?

9. Describe particularly the mineral resources of the various Provinces of Canada, specifying where they are found, and as far as you can the extent to which they have been utilized.

10. Describe generally the physical characteristics of the British Islands, and show how these have to a large extent determined the occupations of the people in the various parts of the islands.

11. Give the geographical position of, and write full but concise descriptive notes upon, ten of the following places (of which, however, at least five must be outside of Canada):

- | | |
|-----------------------|-----------------|
| (a) Three Rivers. | (n) Plymouth. |
| (b) St. John, N.B. | (o) Glasgow. |
| (c) Yarmouth, N.S. | (p) Dundee. |
| (d) Winnipeg. | (q) Aberdeen. |
| (e) Regina. | (r) Paisley. |
| (f) Vancouver. | (s) Belfast. |
| (g) Esquimalt. | (t) Cork. |
| (h) St. John's, Nfld. | (u) Calcutta. |
| (i) Liverpool. | (v) Bombay. |
| (j) Birmingham. | (w) Capetown. |
| (k) Leeds. | (x) Melbourne. |
| (l) Sheffield. | (y) Sydney. |
| (m) Porstmouth. | (z) Wellington. |

Primary Department.

OPENING EXERCISES.

RHODA LEE.

To make a thoroughly good programme for any school, graded or ungraded, is no easy task. There is one part, however, that gives very often little or no anxiety, and that is the beginning. We all know how a time-table should commence. Does not the first item invariably read, "9 to 9.20, opening exercises?" Certainly that is the recognized introduction to every day's work, and it is this brief period of fifteen or twenty minutes that I wish to discuss to-day.

I have great faith in the morning exercises. They are, to a certain extent, the index to the day. Bright, happy, helpful exercises will go far towards insuring a similar style of work. The dull, monotonous repetition, morning after morning, of the same verses, songs (or dirges), will do more towards producing a lifeless, heavy forenoon, than anything I can imagine. How can we get more variety, enjoyment and profit into our opening exercises, is a question we must ask ourselves frequently.

I have not found this part of the programme the easiest to fill satisfactorily. Indeed it has given me some serious thought. As a result of my research for ideas and material, I have a list which I will briefly describe:

The Kindergarten morning songs are always full of interest for the little ones. So also are the children's hymns, such as "Jesus bids me shine," "Yield not to temptation," "The Golden Rule," and others.

Next in order on my list come Bible verses. These should form a part of every morning's exercise, but need not necessarily be always taken up in the same way. I have seen a bee-hive sketched on the black-board, and in every division of the old-fashioned apparatus was a verse beginning with the word "Be." These be's were recited by the class in concert. Another set of verses are the "Blessed's." Still another plan is to repeat a number of verses ar-

anged alphabetically. Thus, A. "A good name is rather to be chosen than great riches." B. "Be ye kind to one another." C. "Create in me a clean heart." D. "Do unto others as you would that men should do to you." Not long ago I taught the verses regarding the sheep, in the 10th chapter of John, and in connection we sang the "Ninety and Nine." At another time we took up the verses touching on sowing and reaping, and sang Phœbe Carey's beautiful hymn, "Scatter Seeds of Kindness."

Occasionally I tell a Bible story. Very frequently I tell some little tale, historical or otherwise, clothing some particular moral truth that I wish to impress. If possible, I connect with the story a stanza or two of poetry, as "something to think about." For instance, after telling a story that brings out the beauty of truthfulness, the class repeat—

"'Tis a little thing to do,
To speak the word that's true,
Yet truth is always best,
And he who speaks is blest.

This you all must learn at length,
Lies are weak and truth is strength;
In fact there is nothing that keeps its youth,
As far as I know—but a tree and truth."

Some practical illustration of true politeness is followed by—

"Politeness is to do and say
The kindest thing in the kindest way."

"Hearts like doors will ope with ease,
To very, very little keys,
And just remember they are these,
'I thank you sir,' and 'if you please.'"

A good collection of such stories is given us by Julia Dewey, published by the Educational Publishing Co., Boston.

I have yet to mention the memorizing of verses, suitable to the season of the year. Susan Coolidge has a poem, of which the children are very fond, beginning—

"I will tell you how the leaves come down,"
The great tree to his children said,
"You are getting sleepy, yellow and brown;
Yes, very sleepy, little red,
It is quite time you went to bed."

The remaining verses are suggestive and pretty, and greatly appreciated by the little ones. Another writer of child-songs has given us these verses, which have, I believe, been set to music:—

"Come, little leaves," said the wind one day,
"Come o'er the meadow with me and play.
Put on your dresses of red and gold,
Winter is coming, the days grow cold."

"As soon as the leaves heard the great wind call,
Down they came fluttering one and all.
O'er the brown earth they danced and flew,
Singing the soft little songs they knew."

Occasionally you might allow the children to repeat verses learnt at home and elsewhere.

The morning newspaper may be also an enjoyable part of the opening exercises. The interesting events of the previous day having been written on the board, the editor has the honor of reading his paper to the class.

The time for prayers is varied. Some teachers prefer them first thing in the morning, others later. It matters but little when they come, so long as they are never omitted. And here let me offer a suggestion. There are some little prayers that

are so readily grasped by the children, and appeal so forcibly to their best natures, that I think we might make use of them in addition to the Lord's Prayer.

This completes my list at present, but I am quite certain that the ingenuity and originality of many of my readers will add materially to it, perhaps double it. Let us think over the first twenty minutes of the day, and realize some of the "golden opportunities" they hold for us.

RAPID ARITHMETIC.

ARNOLD ALCOOTT.

As I am sure that all our teachers are endeavoring to make their pupils excel in quick methods in primary arithmetic, it may, perhaps, be well to take a cursory review of some of the means which lead to mental brightness in this branch of study. It is my opinion that we put our pupils to their slates too soon. Quick mental work leads to quick written work.

A five-minute period spent in an exercise like the following will brighten any class: The teacher says 6 and 4 and 3 and 2. As soon as their speed will allow, the pupils raise their hands, as they have obtained the answer. A series of simple questions involving only the combinations which the little ones have learned will develop rapid thought in addition as quickly as any single exercise of which I know. Just try this for five minutes a day, and note the aggressive spirit which it arouses in your class.

As addition and multiplication are intimately related, one of course suggests the other. Now let me give a style of question which will include the work in the two rules. The teacher says, add 3. Then as the table of two times is being studied, she says 6 multiplied by 2? Answer, 12. Two 9's? Answer, 18, and so on. Always apply to the particular work in hand.

Then, again, there is no better style of question than the Change questions. It will be well with the junior pupils to begin with the ten-cent standard, and gradually reach the twenty-five cent, and fifty-cent standard. Thus, two articles costing eight and nine cents, what is the change out of a quarter? Having explained the style of question, do not say anything after mentioning the standard taken, excepting the prices of the two articles, thus, four, nine.

Now, apply the foregoing work to the slates by giving one column addition sums. Also, have on the board under your curtain as follows:—

$$\begin{array}{r} 9 + 9 + 2 + 5 = \\ 7 + 6 + 7 + 9 = \\ 25c. \left\{ \begin{array}{l} 8, 7 = \\ 4, 9 = \end{array} \right. \end{array}$$

Answers to be written on slates or paper.

* Question Drawer. *

VARIOUS "SUBSCRIBERS."—For the subjects, limits, etc., prescribed for examinations and certificates of any grade, it is always better to write direct to the Education Department. The official circular giving the desired particulars will no doubt be promptly forwarded.

W.—The principles on which the limiting of Third Class Certificates in time and to a special locality proceeds is, we suppose, that they represent a lower grade of qualification than is thought sufficient for a permanent Provincial certificate. They are granted as a temporary necessity, to meet the circumstances of certain localities which are not yet able to support schools of higher grades. The limitation serves as a stimulus to the teachers to fit themselves for higher certificates and to the trustees and people to seek for such.

F.M.C.—It is necessary to get the new edition of the Drawing Books. The teaching of Temperance is compulsory in all Public Schools, and the teaching of Agriculture in all rural schools, but neither Temperance nor Agriculture is compulsory as a subject for the Entrance Examination.

N.B.—Questions in Mathematics, English and Science will be duly answered in their respective departments.

A.P.—The teacher has the right to exercise the same control over pupils during recess as during study hours in school. This involves the right to administer the same punishments. We cannot speak as to the "more or less severe," as more and less are only relative terms. Punishments must not be unreasonably severe, as the teacher of a rural school, who was brought before a Justice of the Peace, the other day, and fined for flogging one of his lads too severely, has learned to his cost.

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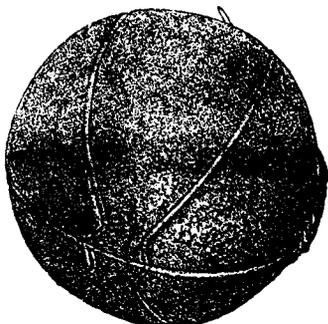
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Gain Over 1890, \$21,454.00				
Total Amount Paid Policy-Holders and Annuitants, 1891	-	-	-	\$313,888.00
Gain Over 1890, \$85,527.00				