

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- | | | | |
|-------------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/> | Coloured covers /
Couverture de couleur | <input type="checkbox"/> | Coloured pages / Pages de couleur |
| <input type="checkbox"/> | Covers damaged /
Couverture endommagée | <input type="checkbox"/> | Pages damaged / Pages endommagées |
| <input type="checkbox"/> | Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée | <input type="checkbox"/> | Pages restored and/or laminated /
Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> | Cover title missing /
Le titre de couverture manque | <input checked="" type="checkbox"/> | Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> | Coloured maps /
Cartes géographiques en couleur | <input type="checkbox"/> | Pages detached / Pages détachées |
| <input type="checkbox"/> | Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> | Showthrough / Transparence |
| <input type="checkbox"/> | Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur | <input checked="" type="checkbox"/> | Quality of print varies /
Qualité inégale de l'impression |
| <input checked="" type="checkbox"/> | Bound with other material /
Relié avec d'autres documents | <input type="checkbox"/> | Includes supplementary materials /
Comprend du matériel supplémentaire |
| <input type="checkbox"/> | Only edition available /
Seule édition disponible | <input type="checkbox"/> | Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées. |
| <input checked="" type="checkbox"/> | Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure. | | |
| <input checked="" type="checkbox"/> | Additional comments /
Commentaires supplémentaires: | | Continuous pagination. |

THE EDUCATIONAL JOURNAL

Consolidating "THE EDUCATIONAL WEEKLY" and "THE CANADA SCHOOL JOURNAL."

Subscription, \$1.50 a year.
In Advance.

TORONTO, MAY 1, 1894.

Vol. VIII.
No. 2.

WOMEN'S MEDICAL COLLEGE, TORONTO.

In affiliation with
Trinity and Toronto University

1894 SUMMER SESSION OPENS APRIL 13th.
TWELFTH WINTER SESSION OPENS OCTOBER 1st.

APPLY FOR ANNOUNCEMENT, GIVING FULL INFORMATION, TO

DR. D. J. GIBB WISHART, Secy., 47 GROSVENOR STREET,
TORONTO.

FOR MUTUAL ADVANTAGE WHEN
you write to an advertiser please mention
THE EDUCATIONAL JOURNAL.

INTERNATIONAL BUSINESS AND SHORTHAND COLLEGE, cor. College St. and Spadina Ave., Toronto. Send for free circular. No boasting. Satisfaction guaranteed.
J. M. MUSGROVE.

TEACHERS WANTED

To take orders for the Unrivalled History of the World during spare time; town or country equally profitable; new plan of selling; liberal commission.

MCAINSH & KILGOUR,
Confederation Life Bldg.,
TORONTO.

THE 10TH EDITION OF THE CANADIAN ACCOUNTANT

HAS JUST BEEN PUBLISHED
BY THE

ONTARIO BUSINESS COLLEGE,
BELLEVILLE.

"The Accountant" has been adopted as the Book-keeping Text Book in the Commercial Specialists' Course at the School of Pedagogy, Toronto.

SEND for the descriptive circular. Address

ROBINSON & JOHNSON,
Ontario Business College,
BELLEVILLE, ONT.

A NEW LITERARY
SENSATION . . .

THE STICKIT MINISTER

And Some Common Men.

BY

S. R. CROCKETT.

CLOTH, \$1.25.

OUR handsomely bound Canadian Copyright Edition of this brilliant production of a new pen is being taken up rapidly. In England the book has already passed into a fifth edition. It has earned a place among the "immortals" of our English literature, and placed its author in the very front rank of living writers. Robert Louis Stevenson enthusiastically commends it. Now sparkling with quiet, delicious humor, again tender with a pathos that sounds the very depths of the heart, it offers all the charms that win for a book not only the admiration but the affection of the reader.

You cannot afford to miss it. For sale by all Booksellers.

WILLIAM BRIGGS
PUBLISHER.

29-33 RICHMOND STREET WEST, TORONTO.

SPRING AND SUMMER TERMS.

The Nimmo and Harrison BUSINESS and SHORTHAND College, Cor. Yonge and College Sts., Toronto, offer special terms and inducements to teachers and others who cannot attend any other time.

Higher course in BOOKKEEPING, SHORTHAND, Mathematics, English, Civil Service, Languages and Telegraphy.

Mathematics and Languages in charge of University men.

OPEN ENTIRE YEAR. ILLUSTRATED CIRCULARS FREE.

Confederation Life Building
Yonge & Richmond Sts.
TORONTO

British American Business College

The oldest and most reliable office kind in the Dominion. All subjects pertaining to a business education thoroughly taught by able and experienced teachers.

O'DEA & HOSKINS

"YE OLDE BOOK SHOPPE."

Teachers, Students and others wanting Books for any School, College or University in the Dominion, send card to address below.

I publish
Latin for Sight-Translation, 25c.
Handbook for Punctuation, 25c.
Teachers Agreements, 5c. each.

FRANK PORTER,
353 YONGE ST., TORONTO.

B 4 U BY BICYCLES OR FOOTBALLS

DROP A CARD TO

LUMSDEN & WILSON,
SEAFORTH, ONT.

THE FISK TEACHERS' AGENCY

32 CHURCH ST., TORONTO.

It furnishes a medium of communication between Teachers and School Boards. Many good positions in North-West and elsewhere now vacant. Terms to teachers on application. No charge to School Boards. When in the city call and see us.

W. O. McTAGGART, B.A., Manager.

TEACHERS—COUNTRY.

The Toronto Business & Shorthand College.

TORONTO, April 30, 1894.

To Harbord Students:

Those of you who may be contemplating a Shorthand, Business or Telegraphy course, cannot possibly do better than attend the Toronto Business and Shorthand College, cor. Yonge and Shuter Streets.

Before deciding I visited the best schools several times, to satisfy myself as to the real merits of each. I entered this institution in February for a complete Shorthand course and found several Harbord boys and girls here before me. After two months' work I am satisfied as to the wisdom of my choice.

Our school has every facility, with the advantage of modern methods. The teachers are competent and willing, the students sociable and the discipline excellent. The rates are reasonable and, as we pay for the best, we get it. Altogether I am well satisfied and feel fully justified in recommending the school so heartily, and will cheerfully answer personal inquiries.

Respectfully yours,
W. R. GIBSON.

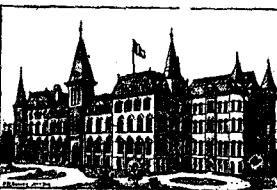
Above is from "Harbord Review."

NEW.

Business Practice from Start.

Special Summer Rates in all departments to teachers. Send for particulars.

W. R. Gibson
President.
3 SHUTER ST. ONT.



ALMA

The Leading
Canadian
College
FOR YOUNG
WOMEN.
ST. THOMAS
ONT.

1. Courses in Literature, Languages, Music, Fine Art, Commercial Science, Elocution, Junior and Senior Matriculation, University Affiliation.

2. Staff of 20 Professors and Teachers (University Graduates and Certificated Teachers) carefully chosen.

3. Music.—A staff of seven teachers with an annual enrollment of over 150 students in Piano, Organ, Voice, Violin, Harmony, Musical Theory, etc., etc. Graduates employed in leading colleges.

4. Fine Art.—The best Art room in Ontario, well equipped and highest record in the "advanced work" in Government examinations. Silver Medal for Design and Bronze in China in last Provincial Art Examinations. Three awards for work at the World's Fair.

5. PUBLIC SCHOOL TEACHERS admitted to collegiate standing, certificates being accepted *pro tanto*.

6. Full courses under competent teachers in Elocution, Callisthenics, Delsarte, etc.

7. Rates for board and tuition from \$40 to \$60 per term; from \$150 to \$200 advance payment. 60 pp. illustrated Announcement. Address

PRINCIPAL AUSTIN, M.A.

The Sauveur Summer College Of Languages

NINETEENTH SESSION.

The next session of *Sauveur College of Languages and Amherst Summer School* will be held at AMHERST, MASS., from July 2 to August 10. For programmes and particulars address

DR. L. SAUVEUR,
6 Copley Street, Jamaica Plain, Mass.,
or, PROF. W. L. MONTAGUE, Amherst, Mass.
N.B.—Dr. Sauveur will send to applicants circulars of his educational works.

INCORPORATED TORONTO HON. G. W. ALLAN
1888 PRESIDENT

CONSERVATORY OF MUSIC

COR. YONGE ST. & WILTON AVE.

University Affiliation for Degrees in Music
Graduating Courses, Scholarships, Medals, etc.
Equipment complete. Students receive a thorough and artistic musical education.
Voices tested free of charge.

CONSERVATORY SCHOOL OF ELOCUTION

(H. N. SHAW, B.A., Principal.)
Delsarte, Swedish, Gymnastics, Voice Culture,
Literature. Calendar of 132 pages mailed free.

EDWARD FISHER, Musical Director.

DELSARTE

College of Oratory

FRANCIS JOSEPH BROWN, President.

(President of the Elocutionists' Association of Canada.)

The Largest and Most Advanced School
of Oratory in Canada.

DEPARTMENTS.—School of Voice Culture, School of Physical Culture, School of Dramatic Art, School of Literature.

For Catalogue, giving full information, address the President.

FRANCIS JOSEPH BROWN,
The Forum, Toronto.

McMaster University,

ACADEMIC DEPARTMENTS.

WOODSTOCK COLLEGE

FOR BOYS AND YOUNG MEN.

Winter Term opens January 2, 1894

FEATURES.—Physical Culture, Manual Training, Matriculation, Teachers' Courses.

FACULTY OF INSTRUCTION.—JOSEPH I. BATES B.A., Ph. M., Principal, The Bible and Latin and Greek; NEIL S. MCKEHEE, B.A., English Language and Literature; DONALD K. CLARKE, B.A., French and German, and Manual Training; HUGH S. ROBERTSON, B.A., Senior Mathematics, Physics and Physical Training; WILSON R. SMITH, Science and Junior Mathematics; ABRAHAM L. MCCRIMMON, M.A., Latin and Greek; R. D. GEORGE, Preparatory Department College Physician—DR. A. MCLAY, Woodstock.
For Information or Catalogue, address the Principal, J. I. BATES, Woodstock, Ont.

MOULTON LADIES' COLLEGE

FOR GIRLS AND YOUNG WOMEN.

Winter Term begins January 2, 1894.

A healthy Christian home. Full College Matriculation and Music Courses.

FACULTY OF INSTRUCTION.—ALICE M. D. FITCH, M.A., Principal, The Bible; BLANCHÉ BISHOP, B.A., English Literature and Natural Science; MARY S. DANIELS, B.A., Classics and Natural Science; HELEN S. SHANKS, Modern Languages; ANNIE M. MCKAY, Mathematics; MARY H. SMART, Resident Teacher in Music; H. GERTRUDE HART, Elocution and Physical Culture; IDA E. HOGGAN, Preparatory Department; MRS. MARY E. DIGNAM, Instructor in Drawing and Painting; A. S. VOOR, Piano; W. O. FORSYTHE, Piano and Harmony; Miss BURKE, Piano.

Students of the course at Moulton College take the chief subjects of the fourth year in the classes of McMaster University. Matriculated Students can also reside at Moulton while pursuing their course at McMaster University.

The aim is that students in both colleges shall be constantly under the same healthy influences which pervade a Christian home.

For information or Catalogue, address the Principal, Miss ALICE M. D. FITCH, 84 Bloor Street East, Toronto, Ontario.

OFFICIAL CALENDAR

—OF THE—

Educational
Department

ANNUAL EXAMINATIONS, 1894.

Notices.

May 1. Applications from candidates for the High School Entrance, Commercial and Public School Leaving Examinations to Inspectors due.

May 3. Inspectors to report to Department number of candidates for same.

May 24. Applications for the High School Primary, Junior and Senior Leaving Examinations and University Pass and Honor Matriculation Examinations to Inspectors due.

May 25. Inspectors to report to Department number of candidates for same.

Examinations.

May 1. Examinations for Specialists' Certificates (except Commercial) at Toronto University begin.

June 27. High School Primary Examination in Oral Reading Drawing, Bookkeeping and Commercial course begin.

June 28. High School Entrance Examinations begin.

Public School Leaving Examinations begin.

Kindergarten Examinations at Toronto, Ottawa and Hamilton begin.

July 3. The High School Primary, Junior Leaving and University Pass Matriculation and Scholarship Examinations begin.

The Commercial Specialists' Examinations at Toronto, begin.

Temperance

. . . Charts.

WE handle the only Charts endorsed by all the educators of the province. Write us for prices.

E. N. MOYER & Co.,
60 Yonge Street,
TORONTO.

Lessons inEntranceLiterature

FOR 1894.

Edited by Fred H. Sykes, M.A.

PRICE 25 CENTS.

Sent Post Paid on Receipt of Price

The EDUCATIONAL JOURNAL

ROOM 20,

111 RICHMOND ST. W., TORONTO

SLATE BLACKBOARD.

MESSRS. E. N. MOYER & Co.,
60 Yonge St., Toronto.

DEAR SIRS,—We can never regret getting that Slate Board from you. It suits every one and every purpose. We can safely recommend your Board to all Trustees.

Yours truly,
THOS. CARSCADDEN.

Russell, April 26th, 1894.



The Cyclostyle Duplicating Apparatus—For Duplicating, Writing, Drawing, Music or Typewriting.

Two thousand exact copies from one writing, each copy having all the appearance of an original. Simple, rapid, clean and durable. Endorsed by upwards of 2,000 firms, corporations and institutions throughout the Dominion. Invaluable for teachers and schools for reports, examination papers, circulars, blank forms, instructions, notices, maps, and all classical work. Used in most all our colleges, and rapidly being taken up by our principal schools. Write for circulars and testimonials.

CYCLOSTYLE CO.,

10 KING ST. EAST, TORONTO.

Maps and Globes

ALL KINDS OF BLACKBOARD MATERIAL
AND SCHOOL SUPPLIES.

CHEMICAL, ELECTRICAL

AND PHYSICAL APPARATUS

Largest Stock in Canada. Lowest Figures.

MANUFACTURERS AND IMPORTERS.

Map and School Supply Co.

31 KING ST. EAST, TORONTO.

The Poole Printing Co.,

of Toronto, (Limited).

MAGAZINE

BOOK AND

CATALOGUE

PRINTERS

ADVERTISING MANAGERS OF

THE EDUCATIONAL JOURNAL

TELEPHONE 2194.

8 and 10 Lombard Street,

TORONTO, CANADA.

The Educational Journal.

CONSOLIDATING

"The Educational Weekly" and "The Canada School Journal."

Subscription, \$1.50 a year,
In Advance.

TORONTO, MAY 1, 1894.

Vol. VIII.
No. 2.

Table of Contents.

PAGE.	PAGE.
EDITORIAL NOTES..... 19	QUESTION DRAWER..... 25
ENGLISH—	PRIMARY DEPARTMENT—
"The Isles of Greece." 20	Plant Study 26
Third Reader Literature 20	Homonyms 26
Correspondence..... 21	Stories for Reproduction 26
FOR FRIDAY AFTERNOON—	Number Problems for Primary Classes.... 27
Luck..... 21	Questions About Animals..... 27
Over the Bare Hills Far Away 21	Questions for the Children..... 27
EDITORIALS—	Class Recitation..... 27
The Public School Curriculum 22	MATHEMATICS..... 28
The Formation of Habits 23	HINTS AND HELPS—
Commercial Examinations..... 23	Whispering..... 29
SPECIAL PAPERS—	Concerning Discipline 29
Defects in our Public School System..... 24	A Teacher's Mistake.. 29
EXAMINATION PAPERS—	Three Plants..... 29
The High School Junior Leaving and University Pass Matriculation..... 25	BOOK NOTICES 30
	SCHOOL-ROOM METHODS—
	Charts and their Uses 30

Editorial Notes.

WE are sorry that the limits of our space have compelled us to divide two valuable articles which are commenced in this number, viz.: Mr. McMillan's address before the Educational Association, and Miss Lawler's paper on "The Isles of Greece." Both will be concluded in next number.

WE shall have to ask the competitors for the Time-Table Prize to possess their souls in patience a little longer. The task of examining and comparing the papers is evidently proving a harder and more tedious one than was at first anticipated. The gentlemen who have so kindly undertaken this work are all busy men, and have, we suppose, found it impossible as yet, in the time at their disposal, to complete the examination as thoroughly as they wish. We feel sure that the announcement will not be much longer delayed, though we are unable to make it in this number, as we had hoped to do.

DISCUSSION is from time to time renewed with regard to the place and value of marks for proficiency and good conduct in the school. Some objections which are valid to a greater or less extent against the method in colleges and universities will scarcely apply to primary or even to public schools. The marking system appeals to the spirit of emulation and love of approbation. There are undoubtedly higher incentives to study which should be available in advanced schools, but there are likewise

far lower ones. With the majority of children it is doubtful if a better stepping-stone to higher things can be found than a judicious use of the marking system, not in any sense as a finality, but as a means to an end. The teacher must get hold of a young mind in order to lift it up, and in order to get hold of it he must come down to its own moral level.

MANY teachers seem to think that the first duty of a teacher is to govern, and that the teaching is a secondary consideration. Of course good teaching is impossible where disorder reigns. But the question is, which comes first in logical order, the governing or the teaching? Can disorder reign in the presence of good teaching? The distinction is of far greater importance than appears at first sight. The schoolmaster who sets out and continues with the idea that teaching is his business, and that just so much government is necessary as may enable him to teach most effectively, has in his hands a clue which will guide him through the labyrinth of the busiest school. On the other hand, he who sets out—as many, we fear, do—with the idea that to establish and maintain a reign of absolute quiet and order is his chief business, is likely to find his time and energies so exhausted in governing that he has little of either left for teaching.

ONE almost insuperable difficulty meets those who seek to stir up the minds of slow-going teachers, and urge them to put themselves in line with the educational progress of the day. Those for whom such counsel is specially intended, and by whom it is specially needed, are the very ones who are least likely to see what is written for their benefit. Progressive teachers who take the EDUCATIONAL JOURNAL may in many cases do good by calling the attention of others to the advantages derived from the weekly or fortnightly visits of a good paper. As to the question "What paper shall I take," let us say, "Take the best you can get." The EDUCATIONAL JOURNAL asks only "a fair field and no favor." We believe in free competition, and only ask that teachers will kindly examine for themselves, and see, before sending abroad for educational papers, whether as good, or better, may not be procurable for less money at home.

A PRIME object with the true teacher will always be to teach the pupil to think. There is a delight in the conscious exercise of power. Every one knows what a joy

the healthy child derives in the exercise of its physical powers in running, jumping, climbing, etc. There can be no doubt that nature intended that no less delight should accompany mental exertion. In fact the pleasures attendant on mental gymnastics are higher in kind, and keener in degree, than any which belong simply to bodily organization. But the difficulty too often is that the thinking faculties are left so long undeveloped that action becomes slow and painful, or that wrong ideas and methods of instruction create a distaste for vigorous mental exertion. Thus study, which should, within healthful limits, be the most delightful of exertions, comes to be associated in the youthful mind with pains and penalties. The teacher's first aim in the case of the dull child should be to stimulate the mind till effort becomes pleasurable. After this success is sure.

"HISTORY taught for examination purposes must consist of a burdensome and almost repulsive mental load of names and dates. If made human and interesting it does not serve the purpose of making marks at examinations." The foregoing sentences are from an editorial which appeared in the daily *Globe*, a week or two since. The article was in defence of the Education Department against the assaults of Dr. Ryerson and other critics in the Legislature. From the connection the extract would appear to be intended as a *resume* of a passage in the speech of the Minister of Education, in answer to the well-worn and rather flimsy charge of disloyalty in having withdrawn British History for a time from the list of subjects prescribed for the High School Entrance examination. The defence was, of course, that British History was not withdrawn from the course, but only from the subjects prescribed for examination, an arrangement which, by the way, was approved of by resolution at the recent meeting of the Ontario Educational Association. But the point to which we wish to call attention is that the sentences quoted, whether they correctly convey the Minister's meaning or not (we have been unable to find any words closely resembling them in the published reports of the speech) contain a most sweeping condemnation of the written examination system. One is at once constrained to ask why a method which is so unsuited to British History should still be considered good enough for Canadian History.

English.

All articles and communications intended for this department should be addressed to the ENGLISH EDITOR, EDUCATIONAL JOURNAL, Room 20, 11½ Richmond Street West, Toronto.

"THE ISLES OF GREECE."

MISS GERTRUDE LAWLER, M.A.

I.—A FEW FACTS FROM GRECIAN HISTORY.

A.

ION [I'-δ n], one of the sons of Japhet, is the common father of all the tribes that went under the name of Greeks. The early history of these tribes is intricate and obscure. The first national enterprise in which the honor of all Greece was concerned, is known as the Trojan War—of which Homer [Ho'-mēr] has sung in the Iliad [Il'-i-ād]. Troy was destroyed, but the war was very disastrous to the victorious Greeks. The year 1184, B.C., witnessed the downfall of Troy.

A spirit of jealousy and animosity during this turbulent period armed the Greek tribes against one another. For instance, the Heraclidae [Hēr-ā-klī-dē], or descendants of Hercules, tried to subdue Southern Greece, which was known as the Peloponnesus [Pēl-ōp-ōn-nē-sūs], thus called from Pelops [Pē'-lōps], one of its former settlers. They were unsuccessful; but, eighty years after the Trojan war, with the neighboring Dorians [Dō'-rī-āns] as their allies, they obtained entire and permanent possession of the country.

B.

About the year 500, B. C., King Darius [Dā-rī-us] ruled over the great Persian dominion. For many reasons he wanted to bring Greece under his sway. He sent his messengers to ask for "land and water," as a sign of submission. Most of the Grecian governments complied; but Athens and Sparta killed the messengers sent to them, and defied Darius. The latter was provoked at the insult and, with 600 vessels and 110,000 men, landed at Marathon [Mār-ā-thōn], a small town not more than twenty miles from Athens. Athens had 10,000 men; Sparta did not send relief in time. Notwithstanding the great odds against Athens, under her famous leader Miltiades [Mil-tī-ā-dēs], she gained a decisive victory, B.C. 490.

King Xerxes succeeded Darius on the Persian throne, and at once made preparations to renew the war with Greece. He gathered together men of many nations, to the number of 5,000,000. That his land troops might pass over the narrow seas that separated Asia from Europe, he had a bridge of boats built. Shortly before his arrival a storm destroyed this bridge. So angry was the king, that he ordered 300 lashes of a whip to be inflicted on the sea, and chains to be thrown into it. Two other bridges were built, and it took seven days and seven nights for his army to cross. He had 12,000 ships.

All the Greek soldiers except those from Sparta and Athens were terrified and fled. Leonidas [Lē-ōn'-i-dās], the Spartan King, with 10,000 men, made a stand at the narrow pass called Thermopylæ [Thēr-mōp'-il-ē]—a pass that gave an entrance from Thessaly, a district north of Greece, into Greece. "Deliver your arms," said the messenger from the proud Xerxes. "Come and take them," sneered the Spartans. The hosts of Xerxes were useless in the narrow pass, but a Greek traitor opened a secret path for the Persians. Leonidas saw the move and sent all but 300 Spartans to oppose it. Of course, Xerxes hewed down the 300, but not till those 300 had caused much loss to him.

Then Xerxes pressed on to Athens; found it deserted by its inhabitants, who with their leader Themistocles [Thēm-īs-tō-clēs] had embarked on their fleet of 300 ships. They carried on a desultory warfare till they heard that Xerxes was advancing into the heart of the country. Then the naval forces of Greece drew together at Salamis [Sāl'-ā-mīs]—a small island, and were followed by the Persian fleet. The Per-

sians were defeated, and never after that year, 480 B.C., did a Persian fleet attempt an invasion of Greece.

C.

About the middle of the fifteenth century Mahommed II. conquered Constantinople; and one by one the Greek islands passed under Turkish rule. Under this yoke, the Grecian people were allowed to become wealthy; for it is a Turkish principle that the subject race must provide for the ruling body. Wealth led the Greeks to seek for luxuries, and, true to their ancient grandeur, they chose education and refinement.

A tide of manliness seems to have flooded the world about the close of the eighteenth century. We need but mention the American War of Independence and the French Revolution. Men everywhere asserted their rights, and helped struggling mortals in foreign lands to be their brothers in liberty. In 1821 the Greeks made an effort to gain their independence. Civil War ensued. However, the cruelties of the Turks won the sympathy of Europe for the suffering Greeks. In 1827 the Turkish fleet was destroyed at Navarino by the combined fleets of England, France, and Russia. In 1828 the Greeks were free.

II.—A GLIMPSE OF A GREAT MAN.

Do you need proof that sometimes truth is stranger than fiction, read Thomas Moore's *Life of Lord Byron*; or if that be not within your reach, there is a very good biography of the poet, in the Series known as *The English Men of Letters*.

'Tis a short life that began in London, England, on the 22nd of January, 1788, and terminated at Missoloughi [Mīs-sō-lou-'ghē], Greece, on the 19th of April, 1824—thirty-six fleet years, but a period teeming with events concerning George Gordon Lord Byron.

Lord Byron—let me call him Lord, for he loved his title and prided himself that his ancestry was old, noble, and patriotic; his father's lineage can be traced to the time of William the Conqueror, and his mother was Catherine Gordon, of Aberdeen, a descendant from James I., the greatest of the Stuarts,—Lord Byron, I say, wins our sympathy when we see him at the age of two years, left to the care of a mother whose nature had been soured by a profligate husband, and whose extensive property had been squandered by that same reckless father;—a mother that could not love her son, because he was born a "lame brat," as she termed it. Listen to the little fellow: "What a pretty boy Byron is!" said a friend of his nurse; "What a pity he has such a leg!" With a lash of a baby's whip, Byron cried, "Dinna speak of it." No love sweetened the childhood of the author of *Don Juan*.

The ambitious child received an ordinary education, and in 1805 entered Cambridge, where he spent two years, publishing from there, what, in comparison with his greatest efforts, may certainly be called boyish verse—"Hours of Idleness." It is well known with what disfavor the *Edinburgh Review* received these efforts of the young lord. Although Byron seemed to feel glad that his work was even noticed, he felt keenly the sarcastic criticism, and retaliated by publishing in 1809, "English Bards and Scottish Reviewers, an excellent piece of satiric poetry. Of it he said in 1816: "The greater part of this satire I most sincerely wish I had never written; not only on account of the injustice of much of the critical and personal part of it, but the tone and temper of it are such as I cannot approve."

Just before publishing his satire, Lord Byron took his place in the House of Lords—but was satisfied with a mere introduction. His entrance brings to mind an incident. "We shall have the pleasure some day of reading your speeches in the House of Commons," said a friend to the young man. "I hope not. If you read any speeches of mine, it will be in the House of Lords." And it was.

In 1809, Byron determined to travel. He

passed through Seville, Cadiz, Malta, and Albania, where he was introduced to the celebrated Albanian Turk Ali Pasha; then on through Greece, Turkey, and Asia Minor.

In 1811 he returned to England—to Newstead Abbey where his mother had just died. In 1812, he showed to the public the first two cantos of *Childe Harold*, which he had written while travelling. His own words best convey their reception: "I awoke one morning and found myself famous," he quoted. England adored him; but, methinks, adoration will spoil the best of men.

In 1815, Byron made perhaps the greatest mistake of his life—he married Annabella Millbank, "without one spark of love on either side." His wife stole away from him, his friends deserted him, and, in 1816 he bade a final farewell to England, and plunged into Italian life. He still wrote, loved, and struggled.

It is well known that Byron was no friend of the established dynasties of Europe. He worshipped Napoleon, and scorned the "legitimate boobies of regular sovereigns." He cherished republican governments, forgetful of Goldsmith's lines:—

"How small of all that human hearts endure,
That part which laws or kings can cause or cure.
Still to ourselves in every place consigned,
Our own felicity we make or find."

In 1823, he began to entertain serious thoughts of joining the Greeks to help them in their patriotic efforts to break the Mahomedan yoke. He embarked for Greece in the same year. In Greece he did all that a skilful warrior-statesman could do; he obtained for them money and sympathy; he drilled their troops; and for all was rewarded by mutiny and boorish ingratitude. One faction hinted that he should be their king! Fancy, Byron as King of Greece! "If they make me the offer I will perhaps not reject it." Another faction—the Suliotes—just as the Greek force was ready to attack Lepanto, by rising unexpectedly, threw Byron into a violent convulsion that endangered his life. Byron grew better but was soon attacked by a fever, which, through his own waywardness in getting drenched in a heavy shower, led to his death.

The morning of the 19th of April dawned gloomily, for the Angel of Death was waiting at the bedside of a brilliant and marvellous hero, yet a lonely and wretched mortal. The merry nut-brown curls fell in ripples over a snowy intelligent brow; the gray eyes flashed forth the enthusiasm of a bursting heart; the sweet lips trembled aspen-like; the little white hands pushed bravely upwards, as the dying soldier muttered: "Forwards! forwards! follow me!" He was dreaming of Lepanto.

There lies the author of *Childe Harold*, *The Prisoner of Chillon*, *Manfred*, *The Lament of Tasso*, and *Don Juan*.

(Concluded in next number).

THIRD READER LITERATURE.

EGYPT AND ITS RUINS.

MISS M. A. WATT.

THIS lesson may be taught with the usual object of the cultivation of perception, conception, comparison, logic, imagination and language, while it may also be the means of directly improving the faculties known by phrenologists as size and distance, and be the means, as well, of imparting a great deal of useful and broadening information to an intelligent class.

It is a lesson rather dreaded because of the large number of new and difficult words to be introduced. These words must be familiarized to the pupils before the real work of the lesson—thought can be taken up, and the plan of taking them up in the dictation time, with their meanings, is perhaps the best for all purposes.

When the regular work of studying this lesson is begun, no faint-heartedness must be allowed to interfere, the aim must be carried through of making every thought clear to the pupils, and, as it often happens with a dreaded

and difficult lesson, it will probably become a great favorite.

To help this on, a map of the world is indispensable. The children will want to know where the Pyramids, the Nile, and Egypt are, and where the route was by which Cleopatra's needle was brought to New York. A real pyramid will be needed, and that can be made in the sight of the class out of any stiff paper, such as an old copy book will furnish. An obelisk will be helpful, too. A measuring line must, of course, be ready to calculate the heights, lengths and diameters by. With sketches on the board of hieroglyphics, of the passages of the pyramids, or of any other Egyptian marvels, with stories and constant references to the clear picture at the head of the lesson, an earnest teacher with an ordinarily intelligent class, should make a success of "The Ruins of Egypt."

Where had we better begin the lesson? Leave out the references to the history and greatness of Egypt, settle where Egypt is, and begin where the child-mind would begin if left to the choice. Then, very likely, you will begin at once on the third paragraph and introduce the class to the study of the "Pyramids." Ask the class to read silently two paragraphs, with the idea that they are to consider what is the most striking point in each. Ask for opinions, some good points for study will be suggested, as "how the builders put the stones into their places," "labor of thousands of men for more than twenty years," "more than twelve acres of ground," "base and height." Here is material for thought; the first will provoke some mechanical genius to give some valuable suggestions, more valuable for the effort of suggestion than for their practical use.

(The teacher, of course, must be ready to answer any of the thousand and one questions that will be asked). The model of the pyramid will show why the height is less than the length of base, especially if a triangle be folded equal to a side of the pyramid and the dimensions examined. Comparisons of the school-grounds or a neighboring field will give the idea of the base of twelve acres, and the height of the school will give the idea of the height of the pyramid. The capacity of the pyramid may be illustrated by filling the model with sand and putting the sand into a cubic block, say into a strawberry box: Compare capacities. The question of cost is suggested by "labor," and the slave-labor of Egypt, as already known to the children in their Bible lessons, will help them to realize the truth of the lesson. A boy, who had given a certain attention to the lesson, was aroused to ask a suggestive question, (suggestive psychologically to the teacher) by hearing another boy tell of a photograph of a mummy which he had seen; he said it was a "photograph of the Pharaoh that chased Moses." "Are there really pyramids?" was the question given with a surprise impossible to describe. Such children are in every class, children who are waiting to have their experience used as a key to open their locked-up senses, children who must have more attention than the average child requires though there is no lack of intelligence when once they are awakened. "What were the pyramids for?" will be the next direction in which the class will lead the teacher. When this is found out the story of the long search for an entrance, the final success, what was found, and a sketch on the board of the passages and the chambers may be given by the teacher.

The mummies are the subject of the next paragraphs. The experience of any who have seen a mummy will be used here. The hygienic fact of the proportion of water in the human body may be alluded to, as given in the Public School Temperance Manual. The old Fifth Reader will supply "An Address to a Mummy," and some hieroglyphics and Egyptian ruins are also described in it.

The obelisks will require some tact; to secure interest in them their size, their monolithic peculiarity, and uses must be dwelt upon.

Reference may be made to them as "historic books," set up in the streets, so that any one might sit down and read the story of some remarkable event. A picture of Cleopatra's Needle in Central Park, New York, would make the class believe in the *realness* of the obelisks better than any description. "How did they transport the obelisk to New York?" will be a good question, and often the class have suggested ways, tell of the wrappings used, and the buoys employed to float the enormous weight of the stone, which is eight foot square at the base and seventy feet in height. A sketch of hieroglyphics, however rude, will be needed here, to make a clear impression and to show how difficult it must have been to translate before the discovery of the tablet referred to in the lesson.

The ruins of Thebes and Karnak are the next subjects. The area of the temple of Karnak is almost too great for comprehension, and the description is beyond the grasp of most of the children. A verbal description will be needed to keep the interest of the class, dwelling upon the enormous size of the capped columns, capable of holding "one hundred men without crowding," and the enormous size of a hall that would be supported by one hundred and thirty-four such columns. The carvings and paintings, still fresh after forty centuries, may be compared with our work which decays and fades so soon, and the reasons asked for. Illustrate by the carvings and paintings of Pompeii, which are fresh as when first made. The first lessons can only lead us to the exclamation of "How marvellous must the greatness of Egypt have been!"

Impress upon the children again that these things are to be seen, that they are standing in their ruined grandeur at this moment, that some day they may see them, and urge upon them the study of the subject, as they can find it, outside their readers. When the lesson has been gone through with as above, use it as a reading lesson, a language lesson, and a composition theme. It will not be exhausted in less than ten lessons at the least calculation, and something of interest will come up at the tenth lesson. The greatest wonder felt by most of children is how the Egyptians did the work, unaided by those things which they are in the habit of considering as commonplaces and necessities, such as steam, electric power and machinery.

CORRESPONDENCE.

I. G.—1. In the *Children's Hour*, the reference to the Bishop of Bingen has already many times been explained in the JOURNAL.

Bingen is a town on the Rhine, in Hesse-Darmstadt. Not far from the town is a rock in the middle of the river, on which stands the famous tower of Bishop Hatto. In this tower, according to the legend, the Bishop was devoured by rats in the year 969. As a matter of historical fact, this tower was built in the thirteenth century, as a toll-house for the collection of river dues.

2. The feelings of the old man in the narrative are (a) "He had not spoken," deep grief that deprived him of all desire to speak, rendered speech impossible, and ("he had not moved") deprived him of all power of motion or desire to move. When "he burst into tears," there is this same grief finding its natural relief in tears.

SUBSCRIBER.—The *Humble Bee* follows very natural ordinary description (1) the description of the bee, especially its flight and character, (St. 1, 2); (2) the bee in spring; (3) the bee in midsummer; (4) the food of the bee; (5) the moral lesson to be drawn from the bee. The strange dealing with the sweet food of the bee, and hence the lesson it conveys make up the moral application of the poem, and hence following the universal habit of fables, etc., come last, while the purely descriptive stanzas come early.

With regard to "Face Against the Pane," the poet fancies himself present, telling Mabel what

she should do; thus we are able to understand what Mabel does in preparation for her father's and lover's return. No one is present with her.

In the "Little Midshipman" quotation marks would make the author's quotation, "Why did you chase," etc., p. 27, too prominent.

E. C.—1. "A verandah around a house makes it cool in summer." Subject, "verandah," "a," "around a house," modifiers of subject (the second really are adverbial phrases qualifying, say, "built" or "placed" understood, but in the brief expression used adjectively); pred. "makes . . . cool," (in which cool is a predicate adjective qualifying "it"); direct obj. "it;" adverbial modifier of time, "in summer." The sentence is simple.

2 (a) "Snap lies on the step of the verandah and (b) barks at all who come to the door." (a) Subj. "Snap;" pred., "lies;" adv. mod. of place "on the step of the verandah," (b) subj. "Snap," (understood); pred. "barks;" adv. mod. of manner or direction "at all . . . door." Subordinate adjective clause in (b): subj. "who" referring to "are;" pred. "come;" adv. mod. "to the door." The sentence is compound-complex.

3. "Desirous of knowledge, he studied intently." "Desirous of knowledge" is an adjective phrase modifying the subj. "he."

4. "Come one, come all!" exclamatory simple sentences. Subject, "one;" pred. "come." Subj., "all;" pred. "come." "This rock shall fly from its firm base as soon as I." Understood [as I] "shall fly," and treat as a complex sentence.

5. "Fear naught, nay, that I need not say, but doubt not aught from mine array." "Fear naught," imperative sentence; subj. "you," (understood); pred., "fear;" object, "naught." "Nay I need not say that," treat "nay" as an independent adverb like "yes." "Aught" in following sentence is the direct obj. of "doubt," "from mine array" is adverb modifier of "doubt."

For Friday Afternoon.

"LUCK."

BY EBEN E. REXFORD.

THE boy who's always wishing
That this or that might be,
But never tries his mettle,
Is the boy that's bound to see
His plans all come to failure,
His hopes end in defeat;
For that's what comes when wishing
And working fail to meet.

The boy who wishes this thing
Or that thing with a will,
That spurs him on to action,
And keeps him trying still,
When effort meets with failure,
Will some day surely win;
For he works out what he wishes,
And that's where "luck" comes in.

The "luck" that I believe in
Is that which comes with work,
And no one ever finds it
Who's content to wish and shirk.
The men the world calls "lucky"
Will tell you, every one,
That success comes not by wishing,
But by hard work, bravely done.

OVER THE BARE HILLS FAR AWAY.

OVER the bare hills far away,
Somebody's travelling day by day,
Coming so slowly, I wonder why?
Oh, she is busy as she goes by.

Sing, little brook, wake up and hear!
Where is the song you learned last year?
Don't you remember the dear old tune,
Naughty small brook to forget so soon!

Dainty wee clouds in the bright blue sky,
Last year I taught you to float so high!
Flowers, where are you? Why don't you blow?
Come, Dandelion, you can, I know.

Spring up, tall grasses and daisies and clover!
Last year I taught you how over and over,
Come with me, every one, this is the way;
Don't you remember me? Why, I am May!

—Selected.

The Educational Journal

PUBLISHED SEMI-MONTHLY.

A JOURNAL DEVOTED TO LITERATURE, SCIENCE, ART,
AND THE ADVANCEMENT OF THE TEACHING
PROFESSION IN CANADA.

J. E. WELLS, M.A., EDITOR AND PROPRIETOR.

Terms: One dollar and fifty cents per annum, payable strictly in advance, Clubs of three, \$4.25; clubs of five, \$6.75. Larger clubs, in associations, sent through association officials, \$1.25.

Individual members, subscribing at a different time from that of the formation of the Club, may send their subscriptions to this office. Their orders will be taken at club rates.

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

In case it may be necessary to make change, please send it in two-cent stamps.

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

Renewals of all subscriptions should be made promptly.

Subscribers addressing the office on any business will, in all cases, please give the names of the post-offices to which their papers are being sent at the time of writing.

Address all communications except those in relation to advertising to

THE EDUCATIONAL JOURNAL,
Room 20, No. 11½ RICHMOND ST. WEST
TORONTO.

ADVERTISING DEPARTMENT.

Rates of advertising will be sent on application to

THE POOLE PRINTING CO., LTD.,

Advertising Managers,

8 AND 10 LOMBARD ST.,

TORONTO.

Editorials.

TORONTO, MAY 1, 1894

THE PUBLIC SCHOOL CURRICULUM.

THE present Government of Ontario has been sometimes sneered at for governing, as it is said, by commissions; but it would be, perhaps, hard to suggest any better way in which to prepare for new legislation upon any subject upon which neither Government nor Legislature is fully informed than by first commissioning a small number of thoroughly competent men to study the question, collect all available information, and submit for the benefit of all concerned a summary of the results of such inquiry, with or without their own conclusions and recommendations. This is the plan largely followed by both the British and Dominion Governments.

We have been querying, in view of all the discussion which is constantly taking place in the Assembly and elsewhere with reference to our Public School system, and especially with reference to its courses of study, whether it would not be an excellent idea for the Government, with the approval, which it ought to have in such a matter, of both parties in the Legislature, to appoint a commission composed of a number of the very wisest and best educators to be found in the Province, to examine thoroughly the curriculum of the Public Schools, compare it with that adopted in the corresponding schools of the best educated countries, and propose a plan for its complete reconstruction in

the light of all the information it might be able to gather from every quarter.

Such a commission should be allowed the largest liberty of investigation and suggestion. It should feel free to leave out old subjects and introduce new ones at pleasure, or to cast aside, if thought best, the existing curriculum, which has so long been without material change in substance, and construct a new one from the foundation. In a word, its one object should be to present, in the light of all the progress that has been made up to the present time in psychological and pedagogical science, the very best course of elementary training, theoretical and practical, that the wisdom of the day can devise. Where is the man or the woman who would be rash enough to say that in such a way a far more effective course could not be arranged than that which is at present in use, and that, too, without the overcrowding which is admitted on all hands to be a serious defect of the existing arrangement.

Such a commission would need to begin at the beginning. Its fundamental inquiry should have special reference to the true aim and function of the Public School, and the sphere within which its operations should be carried on, at the present stage of civilization and general enlightenment. It should determine, first, what is desirable. This should be modified until brought within the limits of what may fairly be considered possible and feasible. A most important branch of the inquiry would be that relating to the relation which should exist between the Public School and the High School. The Minister of Education informs us in his last report that in 1892 about four per cent. of the school population of the Province were enrolled in the High Schools. One question, then, would be whether, seeing that but one in twenty-five of the pupils in the Public Schools enters a High School, the curriculum of the Public Schools should be constructed so largely as it at present is with a view to the preparation of pupils for entrance in High Schools. The answer to this question would manifestly depend very largely upon the prior question whether and to what extent a curriculum more useful to the average pupil who does not expect to enter a high school could be arranged, were the conditions deemed necessary for entrance kept out of sight or relegated to the background. A similar question would, of course, exist as to the relations between the High Schools and the Universities, but that would be, perhaps, beyond the proper scope of the proposed investigation. Probably all would agree with the general proposition that in the

arrangement of the Public School course the interests of the twenty-four, rather than those of the one, should be kept in view. Possibly it might be found that any difficulty in the case could be overcome by the simple expedient of modifying the conditions of entrance to the High Schools.

The possible need of a radical reconstruction of the Public School curriculum has been suggested to us by the very common complaint of intelligent observers touching the small place assigned in the present curriculum to the classes of studies which are deemed best adapted to train and develop the perceptive faculties. We refer, of course, to the natural sciences, in their elementary forms. We find, on reference to the report, that the only subjects at present taught which could be regarded as belonging to the above class are Drawing, Music Botany, Elementary Physics, and Agriculture. The tables show that about seven-eighths of all the pupils enrolled are in the Drawing classes. That is satisfactory. About two-fifths of the whole receive instruction in music, which is not so satisfactory, yet, perhaps, about as much as could be reasonably hoped for. But when we come to the other subjects named, the figures are most disappointing to those who believe that such studies should have a very prominent place in every school. Less than one pupil in a hundred takes Botany; about one in one hundred and twenty-five, Elementary Physiology; and one in twenty-six, Agriculture. It is fair to assume that in the Friday Afternoon exercises, in regard to which teachers have some liberty, and perhaps on other occasions, object and observation lessons are given which do something to supply the great lack indicated by the above figures. Still, making full allowance for whatever may be accomplished in this way for the cultivation of the perceptive faculties of the young, it can hardly be doubted that the facts show a dearth of work along the lines indicated, which places our schools far behind the position in these respects marked out by the best educational opinion of the day. It would be for the proposed commission to see what could best be spared from the present curriculum in order to make room for such studies and exercises in elementary science as are best fitted to supply this great need. We are not of the number of those who would give to modern science studies the primacy in schools, high or low, which many enthusiasts are disposed to claim for them, but, none the less, we deem it a shame and an educational crime to permit boys and girls to leave our Public Schools without having received such cultivation of their powers of observation as

will prepare them to use those powers with both delight and profit, whether in field and wood, or in the most prosaic occupation of the after-life. To be unable to distinguish one familiar tree, plant, bird, or insect from another, or to take a genuine and healthful pleasure in observing the beauties, habits, and *habitat* of each, should be deemed a reproach, not only to the dull-eyed pupil, but to the school which so far failed to perform its proper work of development, and to the system which produces or tolerates such a school.

Failing the consent of the Department and the Government to undertake so radical an investigation, there is, perhaps, another way in which the same end could be reached no less appropriately. We believe that the associated teachers of Ontario should be the most potent factor in determining the educational policy of the Province. Why should not the Educational Association undertake an investigation somewhat of the kind indicated? Those who have read our English Department for the last few weeks will have been made acquainted with a somewhat similar work that has been done by a Committee of the National Educational Association of the United States, in regard to Secondary School studies. The Report of the Sub-Committee in English has been laid before the readers of the JOURNAL, and must have been found interesting and valuable by every one who has read it.

The question of funds would, of course, be a serious obstacle to the work proposed. But without entering into details we should like to ask our readers what they think of the general suggestion, and whether, in their opinion, we are right or wrong in believing that there is both room and need for a somewhat thorough overhauling of our Public School curriculum.

THE FORMATION OF HABITS.

THE character might be not inaptly described as the sum total of the personal habits. As "the straw best shows how the wind blows," so the ordinary, comparatively unimportant act or speech, affords a better guide to the real character than that which is studied and deliberate. In serious and critical cases the man has opportunity to take counsel with prudence, self-interest or expediency. He takes into account what the distant effects of his course of action may be, what others may think or say of it, how it will affect his reputation and future prospects, and governs himself accordingly. But the words spoken and things done on "the spur of the moment," the perpetual succession of little actions which make up the bulk of every life, are more truly characteristic. They may be

regarded as the spontaneous outcome of what the man is in his own nature and training.

Education is largely a process of habit-forming. The most important work that is going on in the school-room from day to day is the repetition of mental acts, which are gradually being crystallized into habits, under the operation of an irresistible law. These habits are all states of the one indivisible mind, but may, nevertheless, for convenience sake, be characterized as bodily, mental, or moral, according to the modes in which they manifest themselves.

To permit school children to occupy awkward or uncouth positions, or to indulge in disagreeable and offensive personal practices, is to neglect an important duty, and to inflict often a life-long injury. To guard against whatever may be injurious to health, tend to physical deformity, or render the coming man or woman socially offensive, is surely one of the first obligations of the true teacher. Which of us has not met with individuals not lacking in intelligence or good sense, who yet are rendered personally disagreeable, and perhaps intolerable to the society to which they belong, by education and intelligence, simply because of some offensive habit, which could have been easily corrected in childhood or youth, but has become well-nigh inveterate.

Intellectual habits are of the very essence of education. By repeated acts of reasoning, comparing, discriminating, etc., the process becomes easy, the power is developed, and the habit established. This thinking habit is what chiefly distinguishes the truly educated from the uneducated. The man to whom the exercise of each faculty of mind has become easy through habit, brings all his powers of thought to bear instantaneously upon any matter of interest or importance, while he who has formed no such habit finds it laborious and fatiguing, if not impossible, to concentrate his mental forces at will upon any object, however worthy of attention.

The same law holds good in the moral sphere. One of the broadest moral differences between individuals is in regard to the habit of moral reflection. One is accustomed to think about the right and wrong of things. The other is not. Two persons may be conceived of as equally conscientious, in so far as disposition to do what they see to be right and to avoid what they see to be wrong is concerned. But, in a given case, the one unhesitatingly obeys self-interest, or impulse, or fashion, simply because he has not formed the habit of scrutinizing the moral quality of actions, while the other, clearly discerning

a moral principle at stake, firmly refuses to do what is seen to be wrong.

Our aim is not to elaborate but merely to suggest, else we might follow out the workings of this law of habit in a thousand ramifications in every-day life. A couple of illustrations must suffice.

Note the social and business value of the habit of mental accuracy. "Whatever is worth doing is worth doing well," is a law as forceful in its application to mental as to mechanical acts. The child should be taught to remember that everything is exactly this or that, and not indefinitely so. Some persons seem never able to fix any fact clearly and definitely in mind. They see every object as if through a kind of mental haze. They never can describe anything exactly, or remember any facts or figures definitely. Their minds have never been properly trained to clear, close, accurate observation.

Note again the incalculable value of such a habit as punctuality. The teacher who insists upon a time for everything and everything in its proper time, is not only making his own work easy, but is helping his pupils to acquire habits which will tell upon their welfare in all after life. For want of early training in order and punctuality, many persons are always making blunders and failures. They forget the exact moment of an appointment and so lose the main chance. They rush to the railway station after their train has gone, and so disappoint waiting friends, or incur business losses. These are but simple, commonplace illustrations. The teacher can set no higher aim before him than that of aiding his pupils to form correct habits of thought, speech and action—correct habits, physical, mental and moral.

COMMERCIAL EXAMINATIONS.

IN ANSWER to enquiries we have been requested to state that no fee is charged candidates for the commercial examinations.

While it is not imperative that candidates shall pass the examination at least one year before taking the Primary, it is very desirable that they should do so.

Pupils who have at any time before the present year been awarded commercial certificates, and who are candidates for the Primary, are not required to take the examinations in book-keeping and drawing to be held next June. They are required to pass again in reading only.

SECRETARIES of institutes and other friends will confer a special favor by giving us timely notice of all meetings of their respective institutes. Once in a while we fail to receive notice in time to have the JOURNAL represented at these meetings, to our loss and, we venture to think, to that of the younger teachers in those associations, some of whom may not be acquainted with the JOURNAL.

Special Papers.

DEFECTS IN OUR PUBLIC SCHOOL SYSTEM.

AN ADDRESS BY A. McMILLAN, TORONTO, CHAIRMAN P. S. DEPT. ONTARIO EDUCATIONAL ASSOCIATION.

OUR school system is a fruitful theme for panegyric. Visitors from the old world and the new speak of it in terms of unstinted praise, and we need not doubt their sincerity. Have we not free public schools at almost every door with an army of trained teachers? Have we not a complete system of high schools, and, to crown all, a university which is the pride of every Canadian? With this evidence before us it would seem rash to say anything which could be construed as a reflection on any part of our system. Yet educational systems like all else, obey the laws of evolution. In their growth and development they are susceptible to environment and are liable at times, like other things, to exhibit unhealthy tendencies. Pruning and training may be necessary here as in the growth of the tree. We do well in educational matters, as in business, to take stock occasionally, that we may know how we stand. I have, therefore, no apology to make for what may be regarded as a stricture on some phases of our school system—a system which, I am pleased to say, merits to a large extent the confidence of the people.

In dealing with the subject it will be necessary, following the line which I propose, to refer to our school system as it relates to the public and the high schools, and in doing so permit me to observe that the most palpable defects of our public schools are due partly to a wrong conception of what the public schools are for, and partly to an undue predominance of the high school in our system.

Let me here disclaim any desire to reflect unfavorably on our high schools. We all know the zeal and intelligence which characterize their management and work. Of all that pertains to them, apart from their relation to the public school, I have nothing to say. We cannot, however, ignore the fact that the tendency of our educational policy is to magnify the high school at the expense of the public school. If this is capable of demonstration, then no false delicacy should enjoin silence. It is too serious to be ignored. The importance of the public schools cannot be too strongly urged. The public school, it has been well said, is the university of the masses. This definition gives us at once the correct conception of the public school. Ninety-five per cent. of all in attendance at school belong exclusively to it. Their education begins and ends here. It is, therefore, a truism to assert that for weal or for woe the influence of the public school on our national life far outweighs all other influences.

But let me ask. Is the public school fulfilling its mission? To answer this we must first define the scope of the work assigned to it and then enquire whether it is adequately equipped for doing this work. There are, as you know, two theories, to some extent conflicting, as to the duty of the state in the matter of education. One maintains the right of the state to provide for such education only as will enable its citizens to provide the means of existence, and is commonly called the utilitarian or materialistic theory. The other, recognizing that man is something more than material, holds that culture should be the basic element in education. The mean between these appears not only the most rational, but that which at present is most in favor. Surely it will not be urged that purely utilitarian views should prevail in our public schools, where, as already stated, ninety-five per cent. of our population receive all their school training. Were this granted, what more effective means could be devised for creating and perpetuating in a democratic country class distinctions. Thus would we adopt in the new world the almost effete systems of the old. This, it need scarcely be added, would not harmonize with the spirit of modern civilization. If the masses are to govern, then must they be educated, and that education must be in keeping with the requirements of the age.

The fact must not be overlooked that within recent years great advances have been made in science, in government, as well as in the social conditions of the people, and that an educational standard adapted to primitive conditions of society, will scarcely meet the demands of the

present, much less the future. While it is necessary that our public schools should furnish a good sound training in the instrumental branches—the three R's, for example—it does not follow that the limit should be drawn here. The complexities of modern civilization call for more than this. To be more specific, I venture the opinion that our public schools should furnish not only a thorough training in the three R's, but some definite knowledge of the history of our race, with its geography; some practical knowledge of elementary science, the advances in which has in recent years done much to revolutionize the industrial, the commercial, and the social life of the world; and not least, though last, should as far as possible lay the foundation of a taste for the language and literature of the Mother tongue.

But it may be answered that our system already makes provision for this or the greater part of it. Theoretically it does in part, practically it does not. The average school boy receives more training in the solution of complex problems in arithmetic than in expertness in applying the first principles of the subject to practical purposes. He is, as a rule, well stocked with the mere technicalities of English Grammar, but he has little facility in the correct use of either in speaking or writing the mother tongue.

His knowledge of the fundamental laws of science, the operations of which might daily constitute for him simple object lessons, is practically nil. Why stones are heavy, why a piece of wood floats in water, does not, as a rule, excite his curiosity. Then as to his taste in reading, is it not too often accurately gauged by the thirst which he betrays for stories of a blood-curdling character, or for those columns of the newspaper which contain the captivating details of the most recent slugging match?

In a word, the majority of our young people leave school with very inadequate preparation for the ordinary duties of life, much less for the duties of citizenship.

What is the cause of this? While it may not be due solely to what has already been suggested, viz., our lowered conception of the public schools as a result of the overshadowing influence of the high school, yet this enters largely into the question. In a paper read by Mr. Reazin before the General Association last year, the injurious effects of the Entrance Examination were clearly pointed out, and the more I consider his statement of the case the more fully am I convinced that his position is unassailable.

Since the public schools must furnish all the education which ninety-five per cent. of our population receives, why should the course of training in these schools be in any way subordinated to the requirements of the high schools. Why should the ninety-five per cent. suffer for the five per cent. This is where we have erred. We are absolutely dominated by the high school idea. In our desire—no doubt an honest one, though very shortsighted, to preserve unity in our system and to give it a finely rounded appearance, we have overlooked the fact that the public schools were not created for the high schools, but for the people. While we have been congratulating ourselves on the perfect harmony of all the parts of the system, we have been working serious injury to its most vital part. Not only our programme of studies but the scope of our teaching has been conformed to this one ideal, utterly fallacious, it is true, yet absolutely overmastering. Should not our public school system itself be regarded as a distinct entity without any special regard to high school requirements? Why should the Entrance Examination be made the "be all" and the "end all" of the public school course? There would be some justification for a policy so one-sided as this if it were true that any appreciable number of our school population continued their education in the high schools. Of late we sometimes hear the term, "primary schools," applied to our public schools, and this is significant as showing the tendency in certain quarters to degrade the true status of the public schools. By what authority, then, has the true aim of public school education been thus perverted? Surely this is not the conception of the system which its founder entertained. Somebody is responsible for this, and although it may not be easy to locate the responsibility, I venture to say that it is not enlightened public opinion.

Not only is it the case that in this way the true status of the public school has been lowered,

but we are doing nothing towards increasing its efficiency within the narrower limits by which it has been circumscribed. According to the report of the Minister of Education for 1891 there were 8336 teachers in the public schools. Of this number 255 were first-class, 2999 second, 4274 third and 812 nondescript, the latter two, combined, exceeding the former two by 1836, while the third-class alone exceeded the first and second combined by 1024. In other words, sixty-one per cent. of all our teachers possess the minimum or lowest qualification. It is not necessary to remind you of the nature of this qualification, that it is covered by passing the primary or lowest examination in the high school with a very short grind at the county model school. It will not be denied that the teacher should be possessed of some breadth and culture—that he should be a model not only for his class but for the community in which he moves. Will anyone seriously assert that the average primary certificate necessarily represents sufficient culture for the teacher? If so, it should be remembered that the standard for admission to our university is from one to three years in advance of this. Surely the times demand more than a mere modicum of culture in those charged with the education of the people. Model school masters of long experience have informed me that not unfrequently candidates for the model schools are sadly deficient in orthography.

Then apart from literary culture, consider the pedagogical outfit of the average graduate of the model school. If we add to his meagre literary attainments, his youth and immaturity, his almost total ignorance of mental science, either theoretical or acquired, it is not surprising that a short term in the model can do but little for his pedagogical equipment. It will scarcely be maintained that the work of the teacher, embracing as it does so much of a psychological character, is less delicate, less intricate, or less easy of mastery, than that of the student of medicine. The latter has mainly to deal with the physical, but the teacher with the mental and moral, therefore successful teaching demands at least talents of as high order and as much training as success in medicine. But imagine a medical profession composed largely of members who have barely any preparation for their calling beyond that which is furnished by their entrance examination. Or imagine the practise of law monopolized by students who have just gained admission to the law society.

But this is not all, nor even the worst phase of the question. Granted that the teacher has literary culture and professional training, a very important, if not the chief, aid to success is experience. What do the statistics say in this respect? During the last fifteen years 1281 candidates passed the examination for third-class certificates. This, let me say in passing, was ninety-five per cent. of the whole number in attendance at the model schools. By some mysterious law of selection it so happens that nearly all candidates for these examinations are adjudged competent after a very short period of training to enter the ranks. But what becomes of this large army of recruits? For the fifteen years already mentioned, the total increase of teachers in actual service was 1868, or a yearly average of 125. To supply this increase of 125 we have the annual output of the model schools, numbering an average of 1200. Need we ask why 1200 new teachers are annually required to fill 125 positions. The death rate among teachers, we are informed, is not higher than the average. We know where they go. With humiliation it must be owned, they go to swell the exodus from a calling which has no future for men possessed of sturdy intellect and laudable ambition. They go, too, when they have remained hardly long enough to make their stay anything more than a mere apprenticeship. Why should they wish to remain with us? The talents, energy and perseverance necessary for success in teaching will, in other callings, bring much richer rewards.

Consider for a moment the inducements which teaching offers. The average salary of male teachers throughout the Province in 1891 was \$423. The Minister's report presented recently in the Legislature makes it less for 1892. In the fifteen years prior to 1891 the average salary of male teachers increased but sixteen dollars. It is lower now than during the five years immediately preceding 1889.

Some time ago the City Council of Toronto adopted a by-law fixing the minimum wages of Corporation laborers at 15 cents an hour and

no one will assert that this is too high. Yet it is a fact that with steady employment the earning capacity of the corporation laborer at this rate is quite equal to that of the average male teacher, and considerably in excess of that of the female teacher. It may have been the laborer's misfortune never to have entered a school, he may not know how to read or write, yet his earning capacity may equal that of his unfortunate brother who, instead of plying his avocation with pick and shovel, has elected to tread the thorny path of pedagogy.

It may be urged that the public will not endorse increased expenditure for education. In 1877 the total cost per pupil of public school education was \$6.26. In 1891 it was \$8.34, an increase of thirty-three per cent. As the advance in teachers' salaries during this period was merely nominal, this increase is largely due to other causes, chiefly to a liberal outlay for new buildings; so that while the public has been generous in providing adequate school accommodation, it has not shown the same liberality in dealing with the teacher. Why should it, looking at it from a purely business standpoint? Is it not a question of supply and demand? Is there not always a superabundance of raw material available to conduct the education of our youth at an average annual cost of five dollars a head? The average citizen need not be expected to pay as much for his child's education as for the shoes which his child wears, especially as the price of brains in the pedagogical market rules lower than the price of leather.

(Concluded in next issue).

Examination Papers.

To the Editor of the EDUCATIONAL JOURNAL:

SIR,—I enclose you two examination papers marked (1) and (2), and respectfully request you to publish them in your valuable paper if that is convenient. My reasons are: (a) The questions are of general interest to all teachers and pupils who are at work on the Junior Leaving and University Pass Matriculation course. (b) These questions furnish a very instructive comparison of the amount of knowledge a student is expected to acquire on the subject of Physics during the years' attendance as a student at Toronto University, and the amount he was supposed to possess when he entered. The papers are of about equal length; in the matriculation paper fourteen numerical results, and the second year paper nine. On the latter paper there is enough book work in the form of definitions that could be learned by heart to count over 50% of the paper; on the matriculation paper it would be very hard to make 80% in that way.

Comparing these two papers, No. 1 set to High School Pupils who have spent ten months at Physics, No. 2 set to Undergraduates who have spent two years within the academic walls of Toronto University, I ask you, Mr. Editor, to consider the want of harmony between the standard the University imposes upon the High Schools and Collegiate Institutes, and the "softly sweet" standard imposed upon its own students when they have completed half the course requisite for a degree. In my undergraduate days a pass man of the second year did not get off quite so easily, and a pass matriculant was not required to take physics at all. I think most people who know the subject will pronounce the matriculation paper several degrees more difficult than the other. How much then is the undergraduate expected to learn?

Yours truly,
HIGH SCHOOL TEACHER.

THE HIGH SCHOOL JUNIOR LEAVING
AND UNIVERSITY PASS MATRICU-
LATION, JULY, 1893.

PHYSICS.—I.

1. A BODY of mass 25 grammes starts with a velocity of 20 centimetres per second, and has a uniform acceleration in the line of motion of 10 centimetres a second per second. Find, at the end of a minute, giving units in each case,
 - (a) its velocity,
 - (b) its kinetic energy,
 - (c) its distance from the starting point.
2. (a) How would you shew experimentally that a body, projected horizontally from a point, takes the same time to reach the ground as it would were it simply dropped from that point?

(b) A body falls from rest at a height of 19.6 metres upon a horizontal stone slab, and rebounds with a velocity half as great as it had on striking. Find the height to which it will rise ($g=980$).

3. Compare the amounts of momentum in

- (a) a 20-kilo weight which has fallen for two seconds from rest, and
- (b) a cannon-ball of 6-kilos moving with a velocity of 6,400 centimetres per second.

4. A uniform rod 3 metres long and weighing 4 kilos has a weight of 2 kilos attached to one end. Find where it must be suspended in order to rest horizontal.

5. (a) Describe a common form of hydrometer, and explain how you would find the specific gravity of a small piece of iron.

(b) The specific gravity of mercury is 13.6 and the mercury barometer stands at 756^{mm}.: find the height of a barometer made with glycerine whose specific gravity is 1.26. What does the barometer measure?

6. (a) Explain how the fixed points on a thermometer are determined, and describe the two common scales of graduation.

(b) Change 104°F. and 23°F. to C. and 250°C. and -40°C. to F.

7. (a) What is meant by saying that the latent heat of steam is 536?

(b) Give the law of Charles. At 20°C. the volume of a mass of gas is 586^{cc}.; what will it be, under constant pressure, at 60°C.?

8. (a) The E. M. F. of each of two Grove cells was 1.9 volts, the internal resistance of each was 3 ohms, and the wire joining them up had a resistance of 2 ohms. Calculate the strength of current when the cells were in series and also when in parallel (or abreast).

(b) Draw a diagram and explain the action of the electric bell.

9. (a) Explain the construction and use of a voltmeter.

(b) Describe (with diagram) an experiment which shews that a current produced or stopped in one coil can induce a current in another coil, and state the rules for determining the direction of the induced current.

UNIVERSITY OF TORONTO, SEPTEMBER,
1893.—SECOND YEAR.

PHYSICS.—II.

1. Explain the term *acceleration*. When is a body said to be uniformly accelerated?

A body starting from rest, acquires in 5 minutes a velocity of 750 miles per hour. Find the acceleration, supposed constant.

2. Define *mass*, *momentum*, *density*; and distinguish between *weight* and *mass*.

A body of mass 4 lbs. falls from the top of a tower 400 feet high. Find at the end of 4 seconds, its velocity, momentum, kinetic energy, and the space passed through.

How much longer will it take to reach the ground? [$g = 32$]

3. Give Newton's three *Laws of Motion*, with illustrations of each.

A shot 48 lbs. starts from a gun weighing 4 tons with a velocity of 200 feet per second. Apply Newton's Third Law to find the velocity of the recoil.

4. Explain *energy*, *work* and *power*. Give the common units.

How much energy must be given to a mass of 10 lbs., that it may rise 4 seconds?

Explain why this amount will vary with location on the earth's surface.

5. Define *centre of gravity*, and explain when equilibrium is *stable* or *unstable*.

Why, in ascending a hill, do we appear to lean forward, in descending to lean backward?

To one corner of a heavy uniform square an equal weight is attached; where must it be suspended by a single string to rest horizontal?

6. State Boyle's Law; and describe an experiment to verify it.

7. Shew that the resultant pressure on a body immersed in a liquid is equal to the weight of the liquid displaced.

How would you find the specific gravity of a piece of iron?

8. Describe the effect produced on a solid when heat is continually applied to it.

Give four instances where expansion of a solid must be allowed for in construction; and three where unequal expansion is utilized.

9. Explain *latent heat*, *specific heat*. If there were no *latent heat*, state what would happen in the spring.

Find the resulting common temperature when 450 grams of water at 75° C. are mixed with a kilogram at 10° C.

Question Drawer.

RAB.—The following is the best approximation we can make to the population of the ten largest Canadian cities:—Montreal 216,650, Toronto 181,220, Quebec 68,090, Hamilton 48,980, Ottawa 44,154, St. John 39,179, Halifax 38,556, London 31,977, Winnipeg 25,642, Kingston 19,264. The latest returns will vary somewhat from this.

E. T. W.—You will find the names and addresses of the members of the Dominion and Provincial Governments in the CANADIAN ALMANAC, also a large amount of useful statistical information. The POSTAL GUIDE, 50 cents, contains a large fund of useful information about Canada and the British Empire. The former can be had for about 15 cents.

A SUBSCRIBER.—The High School History contains the best sketch of the Municipal Institutes of Ontario, suitable to your purpose. There are larger books on the constitution, etc., but they would not answer your needs in preparing lessons. Mr. Robertson is giving a series of papers on the "Growth of the Canadian Constitution," and Mr. McEachern a series on the "British North America Act" in the *Educational Monthly*. But we do not know of any book that would give you in reasonable limits the help you require.

IGNORAMUS.—The earth turns 360° in about 24 hours, or 15° in about one hour, or 1° in about 4 minutes. Hence starting at the first meridian, a place 1° east will have its time about 4 minutes ahead, and a place 1° west 4 minutes behind the time of the first meridian. At sea the ship carries the standard time by means of a good chronometer, and the captain finds this longitude by watching the sun cross the meridian at noon, noting the difference of time on the chronometer, and allowing 1° for every 4 minutes, east or west as the case may be.

C. A. asks why Quebec was given a fixed number (65) of members in the House of Commons by the B. N. A. Act of 1867. In order to preserve the proper numerical proportion between the representatives of the various Provinces, whose populations it was expected would change from year to year, it was necessary to fix on one of the Provinces as a standard. Probably Quebec was chosen as the one whose population was less likely to increase rapidly than that of any other. The B. N. A. Act is contained in the Revised Statutes of the Dominion and in those of Ontario. It is also contained in Bourinot's work on the Canadian Constitution. It is not, so far as we are aware, published separately.

N. MC.—(1) The Canadian Pacific Railway has a line of steamers connecting its western terminus with Australia and other eastern countries. It is the only Canadian line in the Pacific. The trade is only in its infancy. Tea, coffee, wool, etc., are imported. Musical instruments, agricultural implements and other manufactured articles are exported.

(2) Great Britain and the United States are the best foreign markets for the farm and dairy products you name.

T. G.—(1) An English knot, or *nautical* or *geographical* mile, is the sixteenth part of a degree, and is, therefore about 1.15 of an English mile in length. The word "knot" denotes properly one of the knots or bits of cloth or string which are attached to the log-line at regular intervals to mark off the geographical miles.

(2) The best subjects for compositions by members of an Entrance class are such as are within the compass of the pupils' own personal knowledge, such as a description of some familiar place or object, a narrative, real or

imaginary of a holiday excursion, etc. A useful variation is to read, or ask a pupil to read, some brief and interesting incident, or bit of historical or scientific narrative, or a fable, in short anything which is easily understood and likely to interest; and to reproduce it in his own language. Some stories for reproduction will be given in the English Department of next number. Such a book as Huston's *100 Lessons*, or Strang's *Exercises in English Composition*, will be found very helpful and suggestive.

(8) For a sample of the kind of questions which may probably be expected in Temperance and Physiology, see Science column in last number of the JOURNAL.

M. B.—See answer to "A SUBSCRIBER," above. We know no book devoted mainly or exclusively to a description of the municipal institutions of the Province, though a small manual of that kind is often asked for and would be very useful.

A. F. B.—For information about the School System of Manitoba apply to Daniel McIntyre, Esq., Superintendent of Schools, Winnipeg.

E. T.—We know no reason for supposing that there will not be the usual Entrance Examination in the summer of 1895.

Primary Department.

PLANT STUDY.

RHODA LEE.

To KNOW plant life we must begin with a thorough study of the seeds and buds. During the month of April and the early part of May we shall have abundant opportunity for so doing. In our last paper two or three methods of observing seed germination were mentioned. We trust the suggestions will not be considered impracticable. It is quite possible with a class of forty or fifty to allow every child to observe daily the progress of growth. While the class is engaged with some seat-work, allow six or eight at a time, to go to the table or window, and examine with you the seeds or branches that you may be studying. A couple of pocket microscopes will, of course, aid in the work, and increase the interest. Tell nothing that the children can find out for themselves. Let that rule be unalterable.

The study of the structure of roots may begin with the observation of the development of the tiny rootlets of the seed. Sweet peas, morning glory, flax, wheat, oats, etc., raised on netting touching the water in a glass can be studied and observed very satisfactorily. When the development of the root has been seen and the use of the root-hairs understood, we may study the formation of the fleshy roots in which the nourishment is stored. Stems may be studied in a like manner. First, their development from the seeds; second, their use as supporting the leaves, then acting likewise as conveyors of nourishment between the roots and leaves. Cross sections of plant stems should be made and examined carefully; also sections of the tree stems or branches showing bark, wood and pith. The leaves and their uses may be studied in connection with the stems. Later in the season we shall be able to study them with greater advantage, being able to learn something of their form, arrangement on the stem, and position in regard to the buds, etc.

As to the buds, ask the children to bring you small branches of lilac, cherry, apple or plum tree (the tree will not suffer from the loss of a small branch), and place them

in lukewarm water near the stove or register. Cut a little off the end of the branch under water occasionally and change the water frequently. In the course of a few days the buds will begin to swell and bloom out wonderfully. A few chestnut buds placed in water and treated in the same way will burst into leaf in a surprisingly short time.

Formal lessons at stated times are not necessary to the nature study. It can be done in the odd minutes and is more than likely to be carried on at home even more than at school. Encourage the children to prepare seed glasses at home and develop the buds in the house. Ask them to report observations to you and the class. Have written accounts and drawings when possible. Be careful to avoid giving anything of the nature of a task in connection with the work. We might remind ourselves that the first purpose of nature study is not to give a perfect knowledge of plants and animals. The first object is to create as deep an interest as possible in the work of Nature.

HOMONYMS.

RHODA LEE.

PERHAPS the greatest difficulty we meet with in spelling is found in these small and apparently simple words, alike in pronunciation and unfortunately different in form. The numerous homonyms that enter into first-book work are constant stumbling-blocks. Formerly we worked on the plan of teaching the meanings of the words in pairs and connecting when possible the form with the thought. However, compositions and stories were constant reminders that this method was somewhat of a failure. Words and meanings seemed to get hopelessly mixed and I began to believe that the correct use of some words was pretty frequently merely the result of a good guess. Of late we have adopted another method and so far have met with much greater success. The plan is to separate instead of associate the words and by frequent use in every possible connection fix them so well as to make mistake in use almost impossible. For instance, instead of discussing the words *write* and *right* at the same time, teach the spelling of the former only; then dictate a number of sentences such as the following:—*I can write. Tom can write his name. I am going to write a story. I will write you a letter. We write with a pen. We write on paper. We write on slates. Fred's brother writes for the paper. His father writes books, etc.*

After having given a number of exercises containing this word the spelling becomes connected with the action of writing. According to the former method we would next deal with *right* in a similar manner. However, we leave it for the present and take up an entirely different word—*there*. *Go there. Look there. Put the book there. There is the car. There is the lesson. There is my mother. I will go there tomorrow. Is there a pencil on the desk. Is there any water in the jug, etc.*

As other exercises on new words are given, see that they embrace whenever possible the words already taught.

Week.—*There are seven days in the week. Tom came last week. My brother is ten weeks old. My birthday is next week. There are four weeks in a month. Fred was sick last week. Sunday is the first day in the week.*

Pail.—*I have a tin pail. Get a pail of water. Put the pail there. Put the milk in the pail. Tom went for a pail. I broke a pail last week. Fred upset a pail of milk last week. The pail is empty.*

After dictating exercises on five or six other words, we may safely teach the correct use of *right*. *You are right. I am right. That is the right way. There is the right pen. Do what is right. This is my right hand. That is my right foot. Take the right pail. You did right to go there. You were right in going last week.*

Their.—*Their dog was lost. Their house was burned. That is their house. That is their dog. Their father is away. Is that their brother. We have their cat. I have their ball.*

Weak.—*That child is weak. My sister is weak. I am not weak, I am strong. That is weak tea. What weak tea! I feel weak. That old man is weak. See that weak little lamb. That milk in the pail looks weak.*

Pale.—*You are pale. Grace has a pale face. That girl looks pale. That is a pale blue. That is a pale shade. You are not pale, etc.*

The frequent use of the word which these dictation exercises involve, seems to impress the spelling more effectively than all our talking about the meaning could do, while the separating tends undoubtedly to deepen the impression.

STORIES FOR REPRODUCTION.

FABLES FROM ÆSOP.

THE DOG AND THE SHADOW.

A DOG crossing a bridge over a stream with a piece of flesh in his mouth saw his own shadow in the water and took it for that of another dog with a piece of meat double his own in size. He therefore let go his own and fiercely attacked the other dog to get his larger piece from him. He then lost both; that which he grasped at in the water, because it was a shadow; and his own, because the stream swept it away.

THE LION AND THE MOUSE.

A lion was awakened from sleep by a mouse running over his face. Rising up in anger he caught him and was about to kill him when the mouse piteously entreated, saying: "If you would only spare my life I would be sure to repay your kindness." The lion laughed and let him go. It happened shortly after that the lion was caught by some hunters, who bound him by strong ropes to the ground. The mouse, recognizing his roar, came up and gnawed the rope with his teeth, and setting him free, exclaimed: "You ridiculed the idea of my ever being able to help you, not expecting to receive from me any repayment of your favor. Now you know that it is possible for even a mouse to confer benefits on a lion."

THE SHEPHERD BOY AND THE WOLF.

A shepherd boy who watched a flock of sheep near a village brought out the villagers three or four times a day by crying out "Wolf! wolf!" and when his neighbors came to help him laughed at their pains. The wolf, however, did truly come at last. The shepherd boy, now really alarmed, shouted in an agony of terror: "Pray do come and help me, the wolf is killing the sheep." But no one paid any heed to his cries, nor rendered any assistance. The wolf, having no cause for fear, took it easy, and lacerated or destroyed the whole flock. There is no believing a liar even when he speaks the truth.

NUMBER PROBLEMS FOR PRIMARY CLASSES.

GRANDMA BROWN had all her grandchildren to Thanksgiving dinner. She cut her mince pies into 4 pieces each. It took $4\frac{1}{2}$ pies to go around. How many grandchildren had she?

Mamma was baking cookies. In one pan were three rows with 4 cookies in a row. In another pan were 9 cookies. She gave each of 7 children one each. How many had she left?

Harry and all the family went to eat Thanksgiving dinner at grandpa's. Harry saw 12 pumpkin pies in his grandma's cupboard. After dinner there were only $\frac{2}{3}$ of them in the cupboard. How many pies were there left?

Four little Brownies went to look for Thanksgiving turkeys. They found some asleep on a long limb. They cut off the limb and carried it home, and found that they had just two turkeys apiece. How many turkeys had they?

Arthur measured the edge of his desk with his foot rule. It went once across and 7 inches more. How long was his desk?

At the World's Fair Mable saw six camels and four more donkeys than camels. How many in all?

A street car conductor collected 5 fares. He dropped one fare down a crack in the floor. How many cents had he left?

A man bought 4 yards of rope at 2 cents a foot. How much did he pay?

Fred spent two weeks and three days at the seaside last summer. How many days was he there?

Helen dug twelve holes in the sand, and the tide coming in filled one-third of them; how many were left?

How many claws has a cat on both forefeet?—*Primary Education.*

QUESTIONS ABOUT ANIMALS.

BY C. L. MARTZLOFF, DICKSONTON, O.

1. NAME five things you can buy at the grocery that are obtainable from animals.
2. Name the largest animal you ever saw.
3. What is the smallest animal you ever saw?
4. Mention some animals that graze.
5. Write names of three animals having hair.
6. Name three animals that can jump.
7. Name the animals that have hoofs.

8. Why can the hedge-hog burrow in the ground?

9. What animal is a miner?

10. Name animals you have seen.

1. Why does a dog turn around when he goes to lie down?

2. Of what use are flies?

3. Why does a rabbit run better up hill than down hill?

4. How many legs has a beetle?

5. Write the names of three kinds of birds.

6. How many wings has a beetle?

7. What is the color of the fox?

8. Write three good names for dogs?

9. What is a chipmunk?

10. What is a "woodchuck"?

1. Of what is leather made?

2. Of what use is the cow?

3. Is the cat a tame or a wild animal?

4. Of what use are sheep?

5. What is made of milk?

6. How many legs has a fly?

7. Why have birds wings?

8. What animal is a carpenter?

9. What animal is a plasterer?

10. What animals can fly?

1. Name three animals that live in warm countries.

2. Name three animals that live in cold countries.

3. What animal is a spinner?

4. What ones make paper?

5. What one is a tailor?

6. Which one is a fisherman?

7. Which one weaves silk?

8. Which one can make wax?

9. Which one is a digger?

10. What animal is a wood carrier?

—*Pop. Educ.*

QUESTIONS FOR THE CHILDREN.

WHAT do you call a mill where logs are made into lumber?

How do people in large cities get their letters?

What is the distinction between agriculture and horticulture?

Name ten annual vegetables and ten perennial?

What grain is most used for food of the human family, and in what countries is it grown?

What is cream? oil? cheese? lard? tallow?

What is meant by the public? by society? by community?

What is the difference between brown and white sugar?

What is coffee, and where is it produced?

What are condiments?—*Amer. Teacher.*

CLASS RECITATION.

SECOND THOUGHTS.

Now bumble-bee you just keep still,
You need not jump and buzz;
I've had such a time to catch you
As never, never was.

I chased you 'round the garden,
And because I didn't look,
I almost fell right over,
Into that dreadful brook.

And I'm going to put you in it, though
I suppose you think you're hid,
For last week you stung my pussy;
You know very well you did.

Yes, I shall surely drown you!
But perhaps you've got a home,
And your little ones will wonder
Why you don't ever come.

I think perhaps you're sorry
You went and acted so;
If you only wait till I run away
I believe I'll let you go.

FORGET-ME-NOT.

When to flowers so beautiful
The Father gave a name,
There came a little blue-eyed one,
All timidly it came,
And standing at the Father's feet,
And gazing at his face,
It said, with meek and timid voice,
Yet with a tender grace:
"Dear Lord, the name Thou gavest me,
Alas! I have forgot."
The Father kindly looked on him,
And said, "Forget-me-not."

THE SCHOOL ROOM.

HELPING PUPILS.

TEACHERS often insists on the pupils "studying out" everything unaided. The teacher refuses to help the pupils because he thinks it will make them more independent. But the pupils may not know how to study the subject at hand. When this is true, it is a waste of time and energy to have him try to work it out unaided. To illustrate, consider the following problem in the hands of a Third Reader pupil:

Mr. Brown began on the first of January to put money in a bank. He put in \$20 each week, and drew out \$25 each month. How much had he left in the bank at the end of the year?

The pupil has failed to get this problem; not because he has made mistakes in his work, but because he had not thought correctly. He had failed to think the conditions in their proper relations. Don't send him home to work the problem at night. Give him some help that will help him to help himself.

Teacher.—What is the question in this problem?

Pupil.—We wish to find out how much Mr. Brown had in the bank at the end of the year.

Teacher.—Very well. What must we know before we can answer this question?

Pupil.—We must know how much he put in.

Teacher.—Read the problem and see whether that is all we must know.

Pupil.—He took out some money, so I think we must know how much he took out, too.

Teacher.—Can you find, by reading, how much he put in and how much he took out during the year?

Pupil.—No, sir; but we know how much he put in every week, and I know how many weeks there are in a year, so I can find out how much he put in during the year; and I can find out how much he took out, because the problem tells how much he drew out each month, and I know how many months there are in a year.

The pupil has received enough help. Let him try the problem. See that he has another one as difficult, but not like it. He will certainly have a tendency to ascertain what is required and what he must know to get what is required. He will have a clear purpose in mind, and this purpose will lead him to think the process. Give him a problem of this sort: A boy earns \$5 a week and spends \$3 a month. How many months will it take him to pay for a "Safety" that will cost \$48?—*Indiana School Journal.*

Teacher—"Class in miscellaneous questions may rise."

"Tommy, what is a lake?"

Tommy—"A hole in the roof."

Teacher—"What is it that goes flitting from flower to flower, extracting the honey?"

Tommy (who has come from Harlem)—"The nanny goat, mum."

Teacher—"Who made the grass, the trees, and the lovely flowers you see when you walk out?"

Tommy—"I don't know, mum, we only moved here last wake."—*Goldthwaite's Geographical Magazine.*

Mathematics.

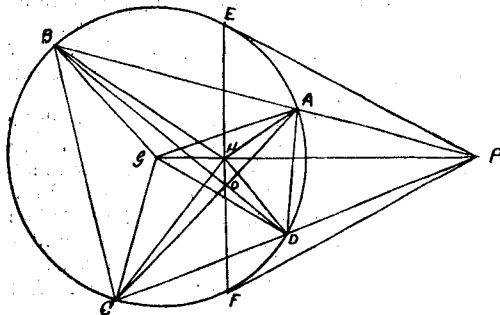
All communications intended for this department should be written on one side of the sheet only and should be addressed to the Editor, C. Clarkson, B.A., Seaforth, Ont.

- J. H. P. furnishes solution of No. 48, April 1893.
 F. S., Halton, solved Nos. 23, 28, 29 of March number, 1894.
 J. ELLIOTT, Brodhagen, solved 25, 26, 27, 28, 29, 30.
 F. H. PRATT, Manotick, solved 22, 23, 25, and sends a problem.
 Y. sent solutions of 23, 24, 25, 26, 27, 28, 29, 30.
 D. H. ELLIOTT, Metchosin, B. C., sends eight problems.
 W. J. HAMILTON, Cambellford, solved 23, 24.
 J. H. LEMON, Avonmore contributes a problem for solution.
 C. E. SMITH, Silver Hill, sends solutions to Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 16, 17, 18, 19, 20 of the Jan. issue.
 F. S., Halton, solved 1, 2, 3, 8, 9, 11, 12, 14, 15, 17, 18, 19 and 21.
 W. J. DOWKER, Brookholm, solved 2, 3, 7, 8, 12, 14, 18, 19.
 D. S. MCKENZIE, Holyrood solved 2, 3, 6, 8, 9, 12, 13, 14, 17, 18, 19, 20, 21.
 T. MCKIM, Alvinston, solved 1, 2, 3, 4, 6, 7, 8, 9, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21.
 On behalf of our readers who have received valuable help we return thanks to these contributors for the generous support they have given to this department of the JOURNAL, and we trust that they have found the work itself a reward. The EDITOR hopes that the private replies sent to a number of readers during the last three months have been helpful to them in their studies. Although he has not heard from one of them, it is probable they have received the information and assistance they required.

SOLUTIONS.

No. 48, April 1893.—P is any point outside a circle; secants PAB and PCD are drawn; AD and BC are joined. Prove (without using the principle of proportion) that their intersection is on the chord joining the points of contact of the tangents from P.

SOLUTION by J. H. P., Owen Sound.



See Mackay's Euclid, deduction 39, page 221.
 PAB, PDC are two secants, required to prove that the intersection of AC and BD is on EF, the chord of contact.
 Find centre G (III. 1). Join PG cutting EF in H, then angles at H are right angles and EH = HF (ded. 8, p. 185).
 Since GEP and GFP are rt. angles (III. 18), G, E, P, F are concyclic (III. 22).
 $\angle EHP = \angle FHP$ (III. 35).
 $\angle PEH = \angle PFH$ (III. 36);
 but $\angle PEH = \angle PHA$ (I. 47) = $\angle PHG + \angle GHA$.
 $\therefore \angle PHG = \angle GHA$ (II. 3) \therefore A, H, G, B are concyclic (III. 35 cor.); sim. G, H, D, C are concyclic.
 Join BG, BH, AG, AH, CG, CH, DG, DH, CB and DA.
 Then $\angle BHG = \angle BAG$ (III. 21);
 but $\angle BAG = \angle GBA$ (I. 5)
 and $\angle AHP = \angle GBH$ (III. 22 cor.)
 $\therefore \angle BHG = \angle AHP$. $\therefore \angle BHE = \angle AHE$,
 similarly $\angle CHF = \angle DHF$.

$\angle CGD = \angle CHD$ (III. 21);
 but $\angle CGD = 2\angle CBD$ $\therefore \angle DHF = \angle CBD$,
 sim. $\angle AHE = \angle ACB$.
 $\therefore \angle AHD$ is the supplement of $\angle CBD + \angle ACB$.
 but $\angle COD = \angle CBD + \angle ACB$ (I. 32) $\therefore \angle AOD$
 is supplement of $\angle CBD + \angle ACB$.
 $\therefore \angle AHD = \angle AOD$. \therefore A, H, O, D are concyclic (III. 21)
 $\therefore \angle OHD = \angle OAD$ (III. 21).
 Sim. C, O, H, B, are concyclic and $\angle CHO = \angle CBO$.
 but $\angle OAD = \angle CBO$ (III. 21).
 $\therefore \angle OHD = \angle OHC$.
 \therefore O must be on the bisector of the angle CHD, that is, on EF.

The following are the selected solutions of the questions given in the Jan. issue:

- No. 1. By THOS. MCKIM.—Contents of cube = 95443.993 cub. in.; \therefore side = cube root of this number = 45.7 nearly; \therefore diagonal on face = $45.7 \times \sqrt{2} = 45.7 \times 1.4142 = 64.628$ inches.
 No. 2. By W. J. DOWKER.—£500 14s. 6d. = £500.725; £1 = \$4.89; \$1 gold = \$1.155 American currency. Hence value of given sum in American currency = $500.725 \times 1.155 \times 4.89 = \2828.06976375 .

No. 3. By C. E. SMITH.—Loss on \$36.35 is .35, since he is paid for 36 in. only;
 loss on 100 = $\frac{.35}{36} \times 100 = \frac{35}{360} = \frac{7}{72}\%$.

No. 4. By T. MCKIM.— $\frac{1}{2}$ of tea at 82c. and $\frac{1}{2}$ of tea at 85c. = all the tea at 82 $\frac{1}{2}$ c., the loss on one part cancelling the gain on the other part. Hence 82 $\frac{1}{2}$ c. = $\frac{1}{2}$ cost per lb., i. e., cost per lb. = 63 $\frac{1}{2}$ cents. Gain per lb. on whole at 82c = $82 - 63\frac{1}{2} = 18\frac{1}{2}$ cents per lb. But the gain on $\frac{1}{2}$ of the tea at 82c. was \$190, \therefore gain on all the tea would have been \$228.
 \therefore No. lbs. bought = $\frac{\$228}{18\frac{1}{2}c.} = \frac{22800}{37} = 616.216216$ pounds.

His shortage = 2% of all the tea, and comes out of the remainder on hand, which is sold at 85c; \therefore loss = 2% of 85c. on each lb. bought = $\frac{1}{50}$ of 85c.
 \therefore whole loss = $(296400 \div 241) \times \frac{17}{1000} = 50388 \div 2410 = \20.81241 .

No. 5. By C. E. SMITH.—
 24 Scotch ells = 24×37.069 inches = 74.138 feet.
 \therefore 42 Scotch ac. = $42 \times 74.138 \times 74.138 = 230850.607848$ sq. ft.
 55 English ac. = $55 \times 4840 \times 9 = 2395800$ "

Difference = 2164949.392152 "

No. 6. By D. S. MCKENZIE—Let x = number of members = number of books; and y = average price.
 $\therefore xxy = 12167 = 23 \cdot 23 \cdot 23$; from which we see that $x = y = 23$ cents.

No. 7. By C. E. SMITH.—

Selling price	Loss or gain.	lbs.
60		
42	+18	2
48	+12	1
72	-12	4

7 lbs. is the least integral number.

No. 8. By C. E. SMITH.—Reckon the gains and losses in apples.
 If all were sold at 50% gain, he would get the cost price of 1500 apples.
 If all were sold at 29% gain he would get the cost price of 1290 apples.
 \therefore By selling some at 10% loss he loses the cost price of 210 apples.

Now every time he sells 100 at 10% loss instead of 50% gain, he loses the cost of 60 apples; \therefore No. times 100 have been sold at 10% loss = $210 \div 60 = 3\frac{1}{2}$; i. e., $100 \times 3\frac{1}{2} = 350$ were sold at a loss and 650 at a gain.

Otherwise, by D. S. MCKENZIE—Let x = No. at 50% gain and y = No. at 10% loss; then $x + y = 1000$, and $\frac{3}{2}x + \frac{1}{2}y = 1290$, whence $5x + 3y = 4300$. But $3x + 3y = 3000$, $2x = 1300$, $x = 650$, $y = 350$.

No. 9. By D. S. MCKENZIE—The first 9 numbers contain 9 digits; the next 90 contain 180 digits = 189 digits. Let x = the number of

consecutive numbers of 3 digits required to make up 750 figures.
 $\therefore 189 + 3x = 750$; $\therefore x = 187$; i. e. the last number is 286.

No. 10.—No correct solution received.

No. 11. By F. S., Halton.—1 lb. Avoir. = 7000 grains, 1 lb. Troy = 5760 grains.

Thus if the 1st cube contain 1 lb. Avoir. + 1 lb. Troy, its weight is 12760 grains; and if the second cube contain 2 lb. Avoir., its weight is 14000 grains.
 \therefore wt. of 1st : wt. of 2nd = 12760 : 14000 = 319 : 350;
 \therefore side of 1st is to side of 2nd = $\sqrt[3]{319} : \sqrt[3]{350} = 6.832771 : 7.047298$.

No. 12. By C. E. SMITH.—Suppose each edge contains 1000 units.

Then the volume contains (1000)³ cubic units before expansion. After expansion each edge contains 1003 units and the volume (1003)³ cubic units; \therefore amount of expansion on a billion units, (1003)³ - (1000)³ = 9027027; \therefore expansion on 100 units = .9027027.

No. 13. By C. E. SMITH.—Average rate = $\frac{1}{2}$ ml. = 440 yds. per minute.
 Distance travelled in 1st min. = $\frac{1}{2} \times 440 = 528$ yds.
 " " " 17th " = $\frac{1}{2} \times 440 = 352$ "

Diff'ce caused by 16 equal decreases = 176 "
 \therefore decrease per min. = 11 yards.

N. B.—The distance gone in the first min. + distance gone in 17th min. = average $\times 2$, and 2 divided in the ratio 1 : $\frac{1}{2}$ gives $\frac{2}{3}$ and $\frac{1}{3}$, the fractions used alone. This should have been made clear.—EDITOR.

No. 14. By F. S., Halton.—Let x = rate per hour, $\therefore \frac{20}{x}$ = No. hours he expected to take;
 and $\frac{8}{x} + 1 + \frac{12}{x+2}$ = No. hours actually taken.

Equating these and reducing we get
 $(x+6)(x-4) = 0$; $\therefore x = 4$, the other value having no interpretation in this problem, and increased rate = 6 miles per hour.

No. 15. By F. S., Halton.—
 Cloth 42 in. wide sells for 98c, wool at 45c. and weighs 6 $\frac{1}{2}$ oz.
 \therefore cloth 1 in. wide sells for 1c., wool at 1c. weighs 6 $\frac{1}{2} \times 42 \times 45 \div 98$.
 cloth 27 in. wide sells for 66c, wool at 77c. will weigh
 $(49 \times 42 \times 45 \times 66) \div (8 \times 98 \times 77 \times 27) = \frac{3}{4}$ oz. per yard.

No. 16. By C. E. SMITH.—
 Long credit rate = $\frac{135}{100}$
 Short or 6 mos. credit rate = $\frac{100}{100} \times \frac{135}{100}$
 Cash rate = $\frac{100}{100} \times \frac{135}{100}$
 Cost price of an article sold for \$12 cash = $\frac{1200}{100} \times \frac{100}{100} \times \frac{100}{135}$.
 Six month's credit price = $\frac{1200}{100} \times \frac{100}{135} \times \frac{100}{100} \times \frac{100}{135} = \$12.53\frac{1}{3}$

No. 17. By D. S. MCKENZIE.—
 Let x = rate in miles per hr., then time req'd = $\frac{21}{x}$ hrs.

At increased rate time req'd would be $\frac{21}{x+\frac{1}{2}}$ hrs.

Then $\frac{21}{x} - 1 = \frac{21}{x+\frac{1}{2}}$ or $\frac{21-x}{x} = \frac{42}{2x+1}$
 Solving the quadratic we have $x = 3$ or $-3\frac{1}{2}$.
 From the nature of the question, only the positive root is acceptable, \therefore rate = 3 miles per hour.

Time required to travel 21 miles would be 7 hrs. \therefore he would cross the bridge at 7 o'clock.

No. 18. By W. J. DOWKER.—If the box were solid the volume would be
 $27 \times 20 \times 14\frac{1}{2} = 7830$ cub. in.
 Volume of cavity = $25 \times 18 \times 12\frac{1}{2} = 5625$ "

Volume of the iron = 2205 "

No. 19. By W. J. DOWKER.—
 Vol. of solid at first = $54 \times 42 \times 16$ cub. in.
 Product of length and thickness of new solid = 54×27 sq. in.

Breadth of new solid = $\frac{54 \times 42 \times 16}{54 \times 27} = 24\frac{2}{3}$ in.
 Decrease in breadth = $42 - 24\frac{2}{3} = 17\frac{1}{3}$ in.
 No. 20. By D. S. MCKENZIE.—
 Original cost = $(200 \times 16\frac{1}{2})$ francs.
 = $(200 \times 16\frac{1}{2} \times 19\frac{1}{2})$ cents = \$631.5
 Duty = $(\frac{200 \times 39.37043}{36} + 12\frac{1}{2})$ cts.
 = \$27.34057638.
 Total cost = \$658.89613194.
 Proceeds of sale = $(\frac{200 \times 39.37043}{36} \times 4.625)$
 = \$1011.60132638.

Difference, or gain = \$352.705194.
 No. 21. By D. S. MCKENZIE.—
 8000 meters = (5×5280) ft.
 1 meter = $\frac{5 \times 5280}{8000} = 3\frac{3}{8}$ ft.
 1 cub. meter = $(3\frac{3}{8})^3 = 35,937$ cub. ft. and
 weighs 1000 Kil.
 ∴ 1 cub. ft. of water weighs $\frac{1000}{35,937}$ Kil.
 Again 1 fathom = 216 cub. ft. and weighs
 13440 lbs.
 ∴ 1 cub. ft. of water weighs $\frac{13440}{216}$ lbs.
 $\frac{1000}{35,937}$ Kil. = $\frac{13440}{216}$ lbs. or 1 Kil.
 = 2.23608 lbs.
 ∴ 1 lb. : 1 Kil. = 1 : 2.23608.
 = 100,000 : 223,608.
 = 12,500 : 27951.

PROBLEMS FOR SOLUTION.

No. 32. By F. H. P., Manotick, Ont.—Stuart and Moss enter into partnership, Stuart contributing \$5000 more capital than Moss. At the end of 5 mos. S. withdraws \$2500 of his capital and 2 mos. later Moss increases his investment by \$2500. At the end of their first year of partnership, their assets exceed their liabilities by \$24,800 and on dividing their net gain in the ratio of their average investments, Stuart's interest in the business is found to exceed that of Moss by \$461.54. Find the amount of the original investment of each.

No. 33. By F. H. P., Pub. Sch. Arith. p. 170, No. 22.

No. 34.—Pub. Sch. Arith. p. 170, No. 23.

No. 35.— " " No. 25.

No. 36. By J. H. L., Avonmore.—How far will the horses travel in reaping a square 10 acre field with a reaper that cuts a 4 foot swath?

No. 37. By A. L. B.—Q. 30, p. 183, H. Sch.

No. 38. By A. L. B.—Q. 31, p. 183 H. Sch. Arith.

No. 39. By J. H. O'HARA, Toledo.—Pub. Sch. Arith. Ex. 38, No. 40.

No. 40. By R. JICKLING, St. Agatha.—Wanted a rule that will tell approximately or accurately the number of feet of lumber in a round log.

No. 41. By D. E., Metchosin, B. C.—Q. No. 20, p. 120 *Todhunter's Mensuration*.

No. 42.—Q. No. 29 p. 131 *Todhunter's Algebra for Beginners*.

No. 43.—Q. No. 34, p. 188 " "

No. 44.—Q. No. 37, p. 189, " "

No. 45.— " 43, " " "

No. 46.— " 44, " " "

No. 47.— " 47, " " "

No. 48.— " 48, " " "

REMARK.—We have inserted these references to problems instead of the problems themselves out of courtesy to distant correspondents. But we hope that some of our enthusiastic con-

tributors will overlook the negligence and endeavor to help these fellow-teachers in their difficulties. They are probably new subscribers who are not aware of the categorically imperative rule that *in all cases both the problem and the reference must be given*. We hope that for the future all our correspondents will kindly observe this rule if they wish to secure attention to their requests. It is manifestly too much to ask the willing workers in this department of the JOURNAL to search out questions in a variety of text-books, when the person asking for help could easily save this additional labor by sending the questions as well as the reference. Will all our new acquaintances please make a note of this rule?

PRIMARY ALGEBRA.

The following paper will serve as a test for those who propose to write at the July examinations. For hints and solutions see *Public School Algebra, Teacher's Ed.*, p. 173, Toronto, 1893.

- Find the value of $3x^5 + 54x^4 + 50x^3 - 19x^2 - 35x - 18$, when $x = -17$.
- Demonstrate the identities :
 (a) $(5m^2 + 4mn + n^2)^2 - (3m^2 + 4mn + n^2)^2 = 4m^2(2m + n)$
 (b) $(a + b + c)(ab + bc + ca) - abc = (a + b)(b + c)(c + a)$
 (c) $(a - b)(c - d) + (b - c)(a - d) + (c - a)(b - d) = 0$.
- Divide $(m^2 + an^2)(x^2 + ay^2) - a(nx - my)^2$ by $mx + any$.
- Prove that if from the square of two numbers there be taken four times their product, the remainder is a square.
- Solve
 (a) $(x - 1)(x - 2) - (x - 3)(x - 4) = 3$.
 (b) $\frac{x}{x - 1} + \frac{x}{x - 2} = \frac{x^2 - 3x + 2}{x^2 - 3x + 2}$
 (c) $(x - a)(b - c) + (x - b)(c - a) + (x - c)(a - b) = x - a - b - c$.
- What value of x will make $x^2 + 2ax + b^2$ the square of $x + c$? What is the result when $a = b = c$?
- A man is thrice as old as his son, five years ago he was four times as old; how old is he?

Hints and Helps.

WHISPERING.

ARE there teachers who yet devote much of their time and energy in trying to prevent whispering? Teachers who call the roll at the close of school every day and require the pupils to answer "perfect" or "imperfect" when their names are called? Teachers who act as Recording Angels and duly record this grading in a register? We thought such teachers were extinct; but a few days ago we read in an educational paper that the editor had been requested to say something in the way of suggesting how to prevent whispering. We liked what the editor said, but we were discouraged to think he had to say it.

Well, we would not prevent whispering or try to do so. Whispering is a good thing in its place. We would try to teach the pupils to use their common sense in regard to whispering. At the same time we would try to use our own common sense. If it becomes necessary to speak to some one in an audience it is better to whisper to him than to speak aloud. This holds as well in school as anywhere else. "But would you say so to the pupils?" says one. Certainly. Why not? "Would you allow then to whisper without first getting permission from the teacher?" Yes; why not? Allow them to whisper whenever it is necessary to whisper. "But who shall judge when it is necessary." The pupil. "But suppose he whispers when it is not necessary?" If he does so it is because he did not use his judgment at all or else he erred in judgment. Ascertain which it is. Help him to see where his mistake is and let him try again. Is not this the way we do in arithmetic? Do we not let him try to decide whether he is to

divide or multiply? If he errs, do we not try to show the error in such a way as to leave a tendency in him not to make another error? Is conduct of less importance than arithmetic? "But will this work with the pupils?" Yes. "Did you ever see it in practice?" Yes. "Was the school orderly?" Yes, and they were not devoting their whole attention to "keeping from whispering." They could not have told how many times they whispered during the day any more than they could have told how many times they breathed.—*Indiana School Journal*.

CONCERNING DISCIPLINE.

PREVENTION of the wrong-doing is better than punishment of the wrong done. Exercise great care in taking a stand, that you may have no occasion to retreat. Fault finding is not calculated to cure a fault. Distrust in the teacher breeds deceit in the pupil. A child properly employed is easily controlled. Obedience won is far better than obedience compelled. Absolute self-control on the part of the teacher is a necessary pre-requisite to proper control of the pupils. A class that will work well by itself is well managed. An orderly changing of places between lessons signifies much regarding a teacher's control over a class. If children push or crowd in the file there is weakness somewhere. If the teacher has to talk much about order there can be no good order. Public sentiment in school can alone secure perfect discipline and it requires a great teacher to discipline through public sentiment. Make no threats. Be firm. Be kind. Be patient. Be pleasant. Be self-contained. Be as perfect as you ask your pupils to be.—*Exchange*.

A TEACHER'S MISTAKE.

"JOHN, you may recite." "I forgot, sir, that the page was torn out of my book and I could not study the lesson last night." "Since when is the page missing?" "Ever since my sister had it last year." "That is a pretty story, John. Let me see your book." If that teacher could only see what an effect his cutting words have on the boy. "What have I done that he should doubt my word?" he asks himself. "Have I ever deceived him? I am a liar in his eyes, and he dares to show it before the whole class. A liar? I? And I always thought so much of him." The poor boy's eyes are filled with tears; his heart swells into his throat; he feels like crying, but boyish pride chills his emotions and hides the grief under the mask of a smile. The teacher does not know that he has lost his hold on the boy—perhaps forever.—*Exchange*.

THREE PLANS.

IN a graded school the principal requested the teachers to endeavor to correct a prevailing evil, with the following result: Teacher No. 1 tried to ridicule her pupils out of the evil habit, but failed, and not only so, but lost the respect of her pupils. Teacher No. 2 scolded and lectured, but the practice was not discontinued, and she acknowledged that she could not do anything further. Teacher No. 3 requested her pupils in the morning to discontinue the practice; during the day she noticed the names of those who had failed to do as requested, detained them for a quiet talk, spoke to them kindly on the matter, asked for a voluntary promise not to offend again and got the promise, which was faithfully kept.—*Educational Review*.

"Were the schoolmaster as noisy as a politician, or as visible as an orator, or as charming as an artist in a studio: the public would hasten to crown with laurels at least all those great in this calling; but they live and die in a world where those who lay the mighty foundations of a cathedral are forgotten, compared with those who carve its columns or design its colored glass."—*Prof. David Swing*.

Book Notices, etc.

MacMillan's History Readers.

No. VII of this excellent series deals with the House of Hanover, and contains biographies of leading statesmen and men of letters, notices of the chief legislative acts, and chapters upon the growth of the colonial empire. It covers the period from 1714 to 1893. It is intended as a reading book for standard VII in the English schools, but would serve well for supplementary reading for advanced classes in Canadian schools. It contains good portraits of prominent men of the period.

**

Westward Ho! or The Voyages and Adventures of Sir Amyas Leigh, Knight of Burrough, in the County of Devon, in the Reign of Her Most Glorious Majesty Queen Elizabeth, by Charles Kingsley. London, MacMillan & Co., and New York; 1893.

Few names stand higher in the list of authors whose works have become classics for children than that of Rev. Charles Kingsley. His "Westward Ho!" has so wide a reputation that we need scarcely do more than inform our readers that a cheap, yet neat and serviceable edition of it, abridged for schools, has now been put on the Canadian market by Copp, Clark Co., of Toronto. For supplemental reading this is admirable. Price, cloth, \$1.25.

**

The Hoosier School-Master.

A copy of this celebrated story reaches our table from the Methodist Book and Publishing House, Toronto, who have just issued a special Canadian edition. The handsome binding and the numerous illustrations of the book at once commend it to the eye, but its great charm lies in its mingling of humor and pathos, the quaint dialect, the brilliant character sketches, the indispensable romance with which Mr. Eggleston has invested the story of Ralph Hartsook's adventures in teaching "the young idea how to shoot" in "Flat Creek deestrick" of the Hoosier State some forty years ago. Perhaps the greatest strength of the story lies in its character sketches. "Old Jack Means," the school trustee, greeting the young teacher with the comforting assurance: "Ef you think you can trust your hide in Flat Crick school-house, I han't got no 'bjection. But ef you get licked, don't come on us. Flat Crick don't pay no 'nsurance, you bet." Mr. Means' young hopefuls, Bud, Bill, and Mirandy, are droll characters. Pete Jones, the exponent of the art of education by the rod—"lay it on good, is what I says to the master, lay it on good. Lickin' and larnin' goes together. No lickin' no larnin', says I." Poor little "Shocky," whose picture brightens the front cover of the book, is one of the sweetest children in all literature. The sketches of the "village Squire" and the "Hard-Shell Preacher," are also rich. A fine piece of narrative prose is the chapter describing the "Spelling Bee." The book may be had in paper or cloth covers of the local booksellers. The Canadian publishers have laid the public under tribute by providing so cheap and attractive an edition of this famous story. Cloth, 90 cents; paper, 50 cents.

**

A Standard Dictionary of the English Language upon Original Plans, designed to give, in complete accurate statement, in the light of the most recent advances in knowledge, and in the readiest form of popular use, the meaning, orthography, pronunciation, and etymology of all the Words and the idiomatic Phrases in the Speech and Literature of the English speaking People. Prepared by more than Two Hundred Specialists and other scholars under the supervision of Isaac K. Funk, D.D., Editor-in-Chief, Francis A. March, LL.D., Consulting Editor, Daniel S. Gregory, Managing Editor. New York: Funk and Wagnalls Company.

It is nearly four years since work on this dictionary, of which the first volume is now given to the public, was begun. The publishers tell us that there have been engaged in its production 247 office editors and specialists and 500 readers for quotations, while some hundreds of other men and women have rendered effective service in various ways in the defining of words and classes of work. Up to the time of issuing

the first volume nearly half a million dollars had been expended, and it is expected that by the time the work is finished it will have cost the publishers a round million. The knowledge that such a work was being undertaken on so gigantic a scale has naturally caused the dictionary to be anticipated with considerable interest. So far as can be determined by a cursory examination, as well as from the strong testimony of many of the foremost scholars who have examined it, this work will amply fulfil the largest expectations that may have been formed respecting it. Its vocabulary is remarkably full and complete, as may be seen by the following comparison. Under the letter A, Johnson's dictionary gives 2,886 words and phrases; Worcester, 6,983; Stormonth, 4,692; Webster (International), 8,358; Century Dictionary, 15,621, while the Standard Dictionary gives 19,736. The full number of words and terms in these dictionaries for the entire alphabet is as follows: Johnson, 45,000; Stormonth, 50,000; Worcester, 105,000; Webster (International), 125,000; Century (six volumes complete), 225,000; the Standard nearly 300,000. In the definitions the plan has been adopted of giving the ordinary meaning first. The order of usage is given preference over the historical order, while obsolete and obsolescent meanings and the etymology are given last. The places of quotations, used to verify or illustrate the meaning of words, have also been so indicated that they can easily be found. A very valuable feature of the work is the system of grouping applied to the names of fruit, flowers, coins, weights and measures, by this means securing a fuller statement of facts concerning these classes of words. Thus, under *constellation*, we find given the names and locations of all the constellations, and under *apple* are given the names, qualities and habitat of over three hundred varieties. Under the word *coin* a table is given of the principal current or obsolete coins of the world, with their approximate values. Then under the word *degree*, we find a list of the degrees conferred by educational institutions all over the world. In the matter of spelling, the tendency of the times toward simpler forms has been recognized, but changes in this matter have been introduced with care and a conservative position maintained. These are some of the features of the work which are obvious on the most cursory examination. As we intend to submit the volume to the test of actual use, in study and office work, as well as to a more critical examination by our English Department, our review proper will appear a few weeks later.

School-Room Methods.

CHARTS AND THEIR USES.

BY H. B. ADSHEAD, MILLBRIDGE.

It is necessary for a carpenter to have an axe-handle. He either buys one, or if he is a "handy" man, he makes one, often not of as nice a finish as the one bought, but having the advantage of being better suited to his own individual requirements.

It would be a waste of time if the carpenter had to make a new axe-handle whenever he wished to use his axe. *He takes care of his labor.*

Teachers, like carpenters, must have tools wherewith to work. Some they must buy, but others, like the carpenter's axe-handle, are better made by the teacher, even if not of so nice a finish, yet better meeting the requirements peculiar to her or his methods, which requirements distinguish her or him from all other teachers.

But the teacher often, unlike the carpenter, does not take care of his labor. What teacher among us has not felt that if he or she only had some question or questions, given some time since, which were adapted to the case in hand, what an amount of labor, mental and physical, would be saved? *Charts are labor-saving devices.*

MATERIALS.

The materials needed to make good serviceable charts are, some light yellow wrapping or manilla paper, about 3 x 4 and as heavy as can be obtained, old broom handles or common

laths, some glue, a stick of graphite (such as cullers use in marking timber), which can be got at any stationer's, and a little enthusiasm, which will be found as you saw the broom handle, glue on the paper, and hang up the chart.

CHART NO. 1.

Paper 1.—(Primary Arithmetic 1 to 10) contains number pictures:

.....
.....
.....

Each dot is about an inch in diameter.

On the other side of the paper all plus and minus questions in dots. $... = ?$ $... + = ?$ $... - = ?$ etc., until number 10 has been reached.

These same number stories are to be told by the child in drawing, not only dots, but all such pictures as he can draw or will attempt to draw; for example, leaves, boxes, hats, fishes, cups, etc., and read aloud in class.

Paper 2.—On same roller (to be used after the facts have been taught by objects).

The teacher will draw 2 apples, 4 apples, 6 apples, with a vertical line through, as indicated by the circles:

o | o o | o ooo | ooo etc., up to 10.

This may be used as a rapid drill on the half of 2, 4, 6, 8 and 10. These stories to be told, using other names as before.

On the other side of this paper the halves of the odd numbers beginning at 1 may be thus expressed and similarly dealt with.

Paper 3.—Contains picture problems drawn in apples, etc., to be solved as seat work or drill in class:

$1\frac{1}{2}$ apples + $1\frac{1}{2}$ apples = ?
 $2\frac{1}{2}$ " + $2\frac{1}{2}$ " = ?
 $3\frac{1}{2}$ " + $1\frac{1}{2}$ " = ?
4 " - $1\frac{1}{2}$ " = ? etc.

On the other side the teacher draws at the top of the paper 6 apples. Below the 6 apples are drawn 3 apples in a group, and a cent near them. Around the apples and the cent a circle is drawn. The problem reads: If 3 apples cost one cent what will 6 apples cost? The problem is to be solved in pictures and given orally, which constitutes a good language lesson. Similar problems may be given on other numbers.

CHART NO. 2.

After figures have been taught, one side of a paper may be taken up with plus and minus problems, for rapid class or seat work. For example, 1st no higher than 6: $-f. 4+2-3+2+1-4+2-3+5 = ?$ Second paper has problems to 7, next to 8, etc., each paper holding 20 or more questions. The letter f. before the question is the teacher's private mark indicating the answer.

The writer has found it of great advantage to use a simple horizontal line with the dividend placed above, the divisor below, to express division, in place of the sign \div . Not only is this method as useful in the primary class, but when the pupil reaches Second and Third classes, the work of problems is more easily and clearly indicated, and when fractions are being taught the advantage is very apparent.

One side of a paper may be devoted to such problems as: $\frac{1}{2} = ?$ $\frac{2}{3} = ?$ $\frac{1}{4} = ?$ $\frac{3}{5} = ?$

(Concluded in next number).

A YOUNG gentleman was passing an examination in physics. He was asked: "What planets were known to the ancients?" "Well, sir," he responded, "there were Venus and Jupiter and"—after a pause—"I think the Earth, but I'm not quite certain."

THE London *St. James Gazette* announces that official instruction has just been sent round to the British Education Office not to speak of "male and female teachers," but of "men and women." Red tape is relaxing.

ANSWERS BY SCHOOL CHILDREN.

FROM a collection in the *Acadia Athenæum*, we cull the following:—

A girl of twenty-one, when asked from what different sources Richard the First obtained money for his crusade, made answer to this effect: "Richard the First, surnamed Cœur de Lion, meaning Lion-Hearted, was a very powerful king. He obtained money in various ways for his crusades, who travelled a great deal." From the same quarter came the following lucid explanation of the particular causes which rendered Wicliff's teaching popular: "Wicliff's teaching became very well known and was thought a great deal of, and no doubt it came in very useful and the people were very glad of it."

But this is lucidity itself compared with the explanation, given by one of the candidates, of the main principles of Wolsey's foreign policy: "The main principles of Cardinal Wolsey's foreign policy were the manners in which he attracted his enemies. In the siege of Quebec he ascended the mountains at dead of night, when his enemies were at rest, and took the town by day-break. His home policy was conducted in a similar manner." Another wrote, "Wolsey was found out by Henry, and charged with high treason for preaching against the Act of Præmunire."

But Hampden seems to have been as sore a puzzle as Wicliff or Wolsey. (1) "He was one of the Pilgrim Fathers." (2) "He was a blacksmith who killed a tax-collector for insulting his daughter." (3) "He figured very prominently in the reign of James the First. He refused to pay ship-money and was tried by twelve bishops. He held fast to his own rights, and though he suffered the extreme penalty, he convinced the people that James was exacting too large a sum to enrich his own person."

One candidate considered the chief battles of the Civil War to have been "St. Albans, Edgehill, Bunker's Hill, and Camperdown." Another wrote, "Both the Royalist and Parliamentary parties in the Civil War suffered from internal dissensions, because their baggage being all swept away they were pierced with cold and hunger." Another answer was strong in causes: "After repeated beheadals, Charles the First died peacefully in the year 1649." "Napoleon Buonaparte was defeated at the battle of Preston Pans, and was shortly afterwards slain in a garden, by a private gentleman with a few peas in his pocket." "Nero was a man of such cold temper that the thermometer was named after him." "Esau was a man who wrote many fables and sold the copyright for a bottle of potash." "David was the first king of Israel who slew six hundred Philistines with the jaw-bone of an ass. He wrote the 'Saint's Everlasting Rest.'"

GEOGRAPHY.

"The Gulf stream is the largest in America. It is used for catching white-fish, mackerel and sturgeon."

WANTED.

SEVERAL good Salesmen, teachers preferred, to take orders for our School Specialties. Samples light. Work pleasant. Good pay. This is a grand opportunity. Don't miss it. Write quickly for terms, etc.

E. N. MOYER & Co.,
School Furnishers,
60 Yonge Street,
Toronto.

Pale Faces

show Depleted Blood, poor nourishment, everything bad. They are signs of Anæmia.

Scott's Emulsion

the Cream of Cod-liver Oil, with hypophosphites, enriches the blood, purifies the skin, cures Anæmia, builds up the system. *Physicians*, the world over, endorse it.

Don't be deceived by Substitutes!

Scott & Bowne, Belleville. All Druggists. 50c. & \$1.

FIFTH EDITION

Indispensable to every live Teacher

Practical *

Problems

IN Arithmetic

For First, Second and Third Classes

By JAMES WHITE, Public School Teacher.

EDMONTON, ONT.

This book has been prepared especially to suit the convenience of Public School Teachers. It contains about 700 Practical Problems suitable for First, Second and Third Classes in Public Schools. It is very carefully graded, and each principle required to be taught is introduced in logical order. It receives the hearty approval of Teachers and Inspectors.

Read their Opinions.

From ALLEN EMBURY, ESQ., Inspector, Peel.

I have examined this little book of Arithmetical Problems, and can give it an unqualified endorsement. The questions are carefully graded, and are specially suited to the wants of our over-worked teachers who have not always the time to devote to the preparation of exercises upon various subjects in the school curriculum. The questions are not stated in the form of propositions; but their statement is incidental, leaving the inner connection of the problems to be discovered by the pupil himself; and in this important feature lies their special adaptability as an educational force. I heartily recommend this book to all teachers wishing to economize time and labor in their preparation for ordinary school work.

From E. TROUGHT, ESQ., Teacher, Member County Board of Examiners, Inglewood.

I have examined with some care Practical Problems in Arithmetic for First, Second and Third Classes, by Mr. White, Edmonton. With out the slightest hesitation I say they are the best I have ever seen—the best in selection, the best in grading, and above all, the best for developing the reasoning powers of the child, and for exercising his ingenuity. A special feature of the grading is that the principles which have been introduced are being constantly made use of in the succeeding problems which are in their turn introducing new principles, so that the whole work may be said to be one unconscious review. It is a great boon to Teachers.

Price, Bound in Cloth, 25 cts.

THE EDUCATIONAL JOURNAL,

Room 20, 11½ Richmond W.,

TORONTO, ONT.

Maps

AND

Globes!



We have on hand the following Maps and Globes, which we will forward, carriage not prepaid, to any subscriber to the EDUCATIONAL JOURNAL at a discount of twenty-five per cent. from regular prices as given below:

MAPS.

	Size Inches.	Regular Price.
One Railway Map of Ontario	43 by 33	\$3 00
" Quebec	67 by 52	4 50
" New Brunswick	67 by 52	4 50
Two South America	67 by 52	4 50
One Asia	67 by 52	4 50
" Australia and New Zealand	67 by 52	4 50
" the World on Mercator's Projection	67 by 52	4 50

N.B.—Any Map not on the foregoing list will be procured and sent to order of a subscriber to the JOURNAL at 20 per cent. discount from regular prices.

GLOBES.

	Regular Price.
One No. 49 Terrestrial, 18 inch, full mounted, oak floor, standard, 48 ins. high	\$40 00
One No. 1, 12 inch, full mounted, bronze standard	13 00
One No. 2, 12 inch, half mounted, bronze standard	8 50
One No. 7, 6 inch, plain bronze, standard	2 00
One No. 22, 8 inch, plain, nickel-plated standard	5 50
One No. 25, 6 inch, plain, nickel-plated standard	2 50
One No. 4, 8 inch, full mounted, bronze standard	8 00
One No. 3, 12 inch, plain, bronze standard	7 00

The Educational Journal,

ROOM 20,

11½ Richmond St. West,

TORONTO.

"GRIP,"

Canada's Only Cartoon Paper,

WILL HAVE

SPECIAL INTEREST

DURING THE

COMING CAMPAIGN

Teachers can make Good Wages taking Orders for Grip.

SEND \$2 AND GET GRIP FOR A YEAR.

SEND FOR PARTICULARS.

PHENIX PUBLISHING COMPANY

81 ADELAIDE ST. W., TORONTO.

J. J. BELL,
MANAGER.

J. W. BENGOUGH,
EDITOR.

Teachers Wanted.

WE want one or more teachers in every county to handle a school specialty Saturdays and during vacation. Big money in it. Work delightful. Write us for particulars.

E. N. MOYER & Co.,
School Furnishers, 60 Yonge St., Toronto.

THE LATEST.

THE BEST.

SIXTH EDITION

—OF—

ARITHMETICAL

PROBLEMS

—FOR—

Senior and Entrance Classes in Public Schools,

—BY—

G. H. ARMSTRONG, Principal Niagara Street School, Toronto.

This edition contains nearly 900 Problems. The Entrance Papers for the last twelve years are appended, also the Public School Leaving Examination Paper for 1892. The answers to all the Problems are given. No other work possesses these features. Seventy-five per cent. of the Public Schools of Ontario use it, also several Commercial Colleges.

READ WHAT TEACHERS AND INSPECTORS SAY OF IT!

I am highly pleased with your Arithmetical Problems for Senior classes. It suits my Entrance candidates exactly. A book such as this is needed by every Fourth Class pupil.—Geo. KIRK, Head Master M.S., Chatham.

I have just examined your Arithmetical Problems for Senior classes. The problems are very suitable and the collection must prove very valuable to teachers. I heartily commend it.—G. D. PLATT, B.A., P. S. Inspector, Prince Edward.

After a careful examination of your "Arithmetical Problems for Senior Classes," I find them well graded and very suitable for the purpose intended. The teacher who uses them for home or class work, will save himself a vast amount of labor, and in all probability secure to his pupils much better results.—J. S. DEACON, Inspector, Halton.

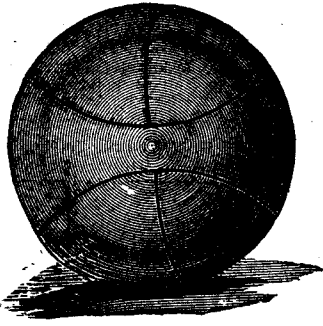
I have no hesitation in saying that for the purpose for which it is intended the work is infinitely the best with which I am acquainted. Its strong point, to my idea, is the logical sequence in the problems by which the pupil is almost insensibly led on step by step until he reaches quite a difficult style of question. The printer, too, has done his work very well, and there are but few typographical errors. I shall certainly recommend every teacher in my inspectorate to use a copy.—J. C. MORGAN, M.A., Inspector, Barrie.

The Educational Journal,

Room 20, 11½ Richmond St. W.,

TORONTO.

NONE GENUINE UNLESS BEARING



THE "FORSYTH" TRADE-MARK.

At the Annual Meeting on Good Friday, 1894, the

Thomlinson Patent Ball,

Stamped with the **FORSYTH** Trade Mark, was unanimously adopted as the **OFFICIAL BALL** of the Western Football Association.

The resolution reads:

"That the F. W. A. recognize the ball handled by D. Forsyth & Co., and stamped with the "Forsyth" Trade Mark, as the only Thomlinson Ball, and adopt the Thomlinson as its official ball."

"My attention having been drawn to an advertisement of a Football called the "Scotch King" of the "Thomlinson" or "Tomlinson" patent shape, this is to certify that a ball of that shape made by any other firm in GREAT BRITAIN, is an infringement of the patent held by me, and that such party or parties (if found) will be prosecuted. Further, that Messrs. D. Forsyth & Co. have the sole agency for these patent balls in Canada and the United States.

(Signed) **W.M. THOMLINSON.**
No genuine Thomlinson ball is stamped "Match," "Glasgow," or "Scotch King."

PRICES:

No. 1.....	\$1 10	} The official match ball of the W.F.A.
No. 2.....	1 30	
No. 3.....	1 50	
No. 4.....	2 00	
No. 5.....	2 70	

Write for descriptive price lists.

D. FORSYTH & CO.,
BERLIN, ONT.

Houston's ... 100 Lessons in English Composition.

A copy of this excellent practical book will be sent to any address, postage paid, on receipt of price, twenty-five cents.

The Educational Journal
ROOM 20,
11 1/2 RICHMOND ST. WEST,
TORONTO.

**A Large Circulation
Bringing Grand Returns
Contributes to the Profits.**

This is the **A B C** of the **EDUCATIONAL JOURNAL.**

WRITE FOR RATES TO
THE POOLE PRINTING CO., LTD.
8 AND 10 LOMBARD STREET,
TORONTO.

The Educational Journal.

BOOK SUPPLY DEPARTMENT.

FOR the convenience of our subscribers who have been accustomed to order educational and other works noticed in our columns through the office of publication

**WE PROPOSE
TO CONTINUE**

for the present at least, to furnish such books by post or express at the advertised prices.

**THE LESSONS
IN ENTRANCE
LITERATURE**

we shall continue to publish in our English Department, but as many teachers will not care to await the slow process of publication in this way we have made an arrangement with the publishers by which we are enabled to send the book promptly by mail, postage paid on receipt of the

PRICE 25 CENTS.

Other books furnished to order as soon as they can be procured from the publishers.

ADDRESS,

The Educational Journal,
Room 20,
11 1/2 Richmond Street West,
TORONTO.

THE CANADIAN OFFICE & SCHOOL FURNITURE CO. LTD.

PRESTON, ONT.

FINE OFFICE, SCHOOL, CHURCH & LODGE FURNITURE
BANK, OFFICE, COURT HOUSE & DRUG STORE FITTINGS

SEND FOR CATALOGUE.

J.L. JONES TORONTO

INK. * * * "A Boon and a Blessing!"
An end to the Bothering Carriage of Ink. **DUCKETT'S**
"WORLD'S FAIR" MEDAL INK-POWDER,
Dissolves in cold water, producing the best and cheapest Black School Ink after being written, whereas writings with aniline inks smudge if wetted even months in the air. **NOT SPOILED BY FREEZING. NEVER MOULDS. NO DREGS.**
In canisters for half-gallons, gallons, or two gallons. Over 30,000 one-gallon canisters have been ordered by the Irish Education Department for supply to Irish National Schools.
Canada Agents: **THE COPP, CLARK CO., TORONTO; W. DRYSDALE & CO., MONTREAL; D. & J. SADLER & CO., MONTREAL AND TORONTO.**
St. Ann's Convent, Prince Albert, Saskatchewan, N.W.T.:—"Madame Collings testifies that DUCKETT'S Ink-Powder makes not only the cheapest but the very best School Ink we have ever used."

ESTABLISHED BY **A. PIDDINGTON**

Mammoth Book Store

We have constantly in stock **Educational Books** of all kinds. Also the late works in **Science and General Literature.** Any book not in stock supplied on short notice, if in print. All mail orders filled promptly.

RISSER & CO., - Successors to R. W. DOUGLAS & CO.
248 Yonge Street, Toronto, Ont.

**Attractive
Advertising
Always
Arrests
Attention.**

FOR RATES OF ADVERTISING IN THE EDUCATIONAL JOURNAL AND OTHER INFORMATION WRITE

THE POOLE PRINTING CO., LTD.,

ADVERTISING MANAGERS,
8 AND 10 LOMBARD STREET, TORONTO.

FOAM YEAST.

(AN EARLY RISER)

SEND 5 CENTS FOR SAMPLE PACKAGE TO

FOAM YEAST COMPANY,

35 WELLINGTON ST. EAST,
TORONTO.

REMINGTON

Standard Typewriter
GEORGE BENGOUGH
Tel. 1207 10-12 Adelaide St. East, TORONTO.

Head Office, Toronto. Incorporated 1886.

THE EXCELSIOR LIFE INSURANCE COMPANY.

HOW TO OBTAIN A PENSION

The Coupon Annuity Bonds, as issued by this Company, are peculiarly adapted to the needs of Clergymen, Doctors, School Teachers, and all others who desire a guaranteed competence for themselves after the lapse of a certain number of years, or absolute protection for their families in the event of previous death. These bonds are most liberal and attractive in form, the rates are materially lower than on any other level premium plan issued. This Company issue the most attractive plans of insurance in existence. Gentlemen wanted to act as district or local representatives of this staunch and popular Company. Address **E. F. CLARKE, Managing Director.**

THE EDUCATIONAL JOURNAL is printed for the proprietor on the 1st and 15th of the month by **THE POOLE PRINTING CO., LTD.** 8 and 10 Lombard Street, Toronto, who are also managers of its Advertising.

*Librarian House of Com
Ottawa
1 May 93.*