OKK
I57C65
E38/
RX-2

THE EDUCATIONAL RECORD

OF THE PROVINCE OF QUEBEC

(Published Quarterly)

Old Series, Vol. XLVII, No. 2.
New Series, Vol. III, No. 2

APRIL-MAY-JUNE, 1929

WHAT is the first commandment to be obeyed in any educational scheme? It is this: Do not teach too many subjects. The second is this: What you teach, teach thoroughly. The devil in the scholastic world has assumed the form of a general education consisting of scraps of a large number of disconnected subjects; and with the artfulness of the serpent he has entrenched himself behind the entrance examinations of the universities.

Culture is activity of thought, and receptiveness to beauty, and humane feeling. Scraps of information have nothing to do with it. A merely well informed man is the most useless bore on God's earth. What we should aim at producing is men who possess both culture and expert knowledge in some special directions. Their expert knowledge will give them ground to start from, and their culture will lead them as deep as philosophy and as high as art. We have to remember that the valuable inteellctual development is self-development, and that it takes place mostly between the ages of sixteen and thirty. From "The Aims of Education" by A. N. Whitehead.

QUEBEC, QUE.

THE CHRONICLE-TELEGRAPH PRINT

BIBLIOTHÈQUE NATIONALE
6 MAR 1969
PUBLICATIONS OFFICIELLES

THE EDUCATIONAL RECORD

A quarterly journal in the interests of the Protestant Schools of the Province of Quebec, and the Medium through which the Proceedings of the Protestant Committee of the Council of Education are communicated, the Committee being responsible only for what appears in its Minutes and Official Announcements.

Old Series, Vol. XLVII. No. 2.....Subscription, $1.00 per annum.

New Series, Vol. III, No. 2.

April-May-June, 1929

J. C. SUTHERLAND,
Editor and Publisher.

LONGMANS' HISTORICAL SERIES FOR SCHOOLS. By T. S. Tout, M.A.

Book 1: A First Book of British History from the Earliest Times to 1919...$1.10
Book 2: A History of Great Britain from the Earliest Times to 1918..$1.65
Book 3: An Advanced History of Great Britain from the Earliest Times to 1923.....$2.75

LONGMANS' HISTORICAL ILLUSTRATIONS

A set of 12 pictures in full colour. $1.00 each. Reduced size 12 for 50 cents

The Roman Wall
Henry V.
Wolfe on Plains of Abraham
Portsmouth Harbour.
Harold's Last Stand at Senlac.
King John.
Charles 1.
A Danish Raid
Richard Cœur de Lion's Sight of Jerusalem.
Augustine Preaching Before King Ethelbert.
The Armada
Trafalgar.

AVIATION STORIES By J. E. Thomson, Illus. Cloth $1.00

Interesting stories of the History and Development of Flying. For children from 12 to 14 years.

CANADIAN HEROINES OF PIONEER DAYS - By Mable B. McKinley. Illus. Clo. .50; Limp .40

Stories full of interest and action about the following:

Laura Secord
Madame de La Tour
Madeleine de Verchères
Madame Hébert
Marie Anne Lagimonière
Abigail Becker
Marguerite de Roberval
Mrs. Shubert
Elizabeth McDougall
Mademoiselle Jeanne Mance.

LONGMANS, GREEN & COMPANY, TORONTO - 2

Of Interest To Secretary-Treasurers

ARE YOU SATISFIED THAT YOUR EQUIPMENT OF MAPS, GLOBES, BLACKBOARDS AND SEATING IN YOUR CLASS ROOMS IS ADEQUATE FOR THE REQUIREMENTS OF YOUR TEACHERS?

IF NOT, YOU CANNOT HOPE FOR THE MOST SATISFACTORY RESULTS.

SOME TIMELY MAP SUGGESTIONS

(All maps mounted on linen with rollers at top bottom.)

North America	Size 41″ x 60″	Each	$5.00
North America	Size 68″ x 54″	"	8.00
South America	Size 41″ x 60″	"	5.00
South America	Size 54 x 68′′′′	"	8.00
Europe	Size 41″ x 60″	"	5.00
Europe	Size 70″ x 63″	"	8.00
Asia	Size 41″ x 60″	"	5.00
Asia	Size 66″ x 53″	"	8.00
Africa	Size 41″ x 60″	"	5.00
Africa	Size 57″ x 69′	"	8.00

All Published by GEORGE PHILIP and SON, LTD.

Recognized as Standard throughout the Empire.

Represented in Canada by

E. N. MOYER COMPANY Limited

CANADA'S SCHOOL FURNISHERS

TORONTO—2—CANADA

WINNIPEG SASKATOON EDMONTON

PARLEZ-VOUS FRANCAIS?

(Par-lay Voo Frohn-say)

Why not learn to Speak French?

USE

HECTOR GARNEAU'S
HOW TO SPEAK FRENCH

With a new and easy pronunciation.
400 Lessons reprinted by permission from
MONTREAL DAILY STAR

POST 50c PAID

RENOUF PUBLISHING COMPANY

1433, McGill College Avenue
MONTREAL

A Dictionary especially planned for elementary school pupils

The "Highroads" Dictionary

Pronouncing and etymological, with an appendix containing words and phrases from the Latin, Greek, and modern foreign languages. Features of the dictionary which make it particularly suitable for junior pupils' use:—

The definitions are clear and simple.
The derivations are indicated.
Many words which gained currency during the war are included.
It is strongly bound in cloth boards in a handy size—$4\frac{1}{2}''$ by $6\frac{1}{2}''$.
It is light in weight and moderate in price—50 cents per copy.

A pamphlet which has a specimen page from the dictionary will be sent on application.

THOMAS NELSON & SONS, Ltd.

77 WELLINGTON ST. W. **TORONTO 2**

CONTENTS

	Page
Editorial Notes	71
Stars and Planets	72
Hints on the Teaching of French	80
Making Arithmetic Practical and Interesting	83
Arbor Day (Letter from Hon. Mr. Delage)	87
Book Notices	89
Coniferous Leaves Valuable	91
1928 Secondary School Examinations	92
Inspectors' Reports for 1927-28	108
Minutes of Protestant Committee	125

PLEASURE BOOKS

Distinctive Fiction

KNIGHT'S GAMBIT:—by Guy Pocock ..... **$ 2.00**
"A beautiful analysis of the emotions of the sensitive child."—**Daily News.**

PLUCK THE FLOWER:—by John Brophy..... **$ 2.00**
"A powerful, well written story."—**Church Times.**
The struggle of John Ockendale to adjust his idealistic soul to present economic conditions.

THE REBEL GENERATION:—by Jo van Amers-Kuller..... **$ 2.00**
"Exquisite in its detail, its clear line and pattern... authority, wisdom, and an excellent sense of humor."—**Times Literary Supplement.**
Five generations of rebellion that does not bring peace in the end.

THE GLEAMING ARCHWAY:—by A. M. Stephen..... **$ 2.00**
A gripping tale of Craig Maitland's experiences in the logging camps of B. C. and the squalid life of the underworld on Vancouver's crowded waterfront.

TRAVEL BOOKS

CAR AND COUNTRY:—by John Prioleau..... **$ 1.50**
Entertaining and highly practical book outlining motor trips, bus trips, and walking trips in England and Wales. With fifty-two maps.

CATHEDRALS, ABBEYS and FAMOUS CHURCHES..... **75c. each.**
Discerning appreciations of famous buildings in the Old Land by discriminating critics. Profusely illustrated.

BEYOND THE ROCKIES:—by Lukin Johnston..... **$ 3.00**
Illustrated with over fifty photographs is this alluring tale of adventures in the remote nooks of the most picturesque region in Canada.

GENERAL LITERATURE

TOP OF THE WORLD:—by Nelda Sage ..... **$ 1.00**
A slim volume of gay verses expressing the magic and wonder of a certain hill top in Vancouver.

WHEN FUR WAS KING:—by H. J. Moberly..... **$ 2.50**
A brilliant, memoir of a unique personality, a retired factor of the Hudson Bay Company telling in terse, racy narrative of the thrilling early days in our country.

NAPOLEON A STUDY:—by Dmitri Merezhkovsky..... **$ 2.25**
An entirely original interpretation of Napoleon's personality, sketched with splendid vigour and psychological insight. The outstanding life of Napoleon.

WAYFARER'S LIBRARY:—
The famous Everyman's library at **55c.** in cloth and **75c.** in reinforced cloth is ever popular for lovers of standard fiction and Biographies. More popular perhaps, for summer reading is Wayfarer's Library at **50c.** including attractive reprints of more modern works including novels by Conrad, Wells, Bennet and others.

Write for our complete list of holiday books, and suggested reading courses.

J. M. DENT & SONS, Ltd

224 BLOOR STREET WEST. TORONTO 5, ONT.

EDITORIAL NOTES

In the list of members of the Protestant Committee in our last issue the name of Mr. E. G. Pierce of Sherbrooke appeared. Mr. Pierce is the General Manager of the Sherbrooke Daily Record, and was appointed in succession to the late Mr. Victor E. Morrill. Since that date Mr. Malcolm T. Robb of Huntingdon was appointed by order-in-council to succeed the late Chief Justice Martin of Montreal. The two new members are familiar with rural school conditions; Mr. Pierce through his journalistic contacts, and Mr. Robb as an experienced school commissioner in Huntingdon county. Mr. Robb is a brother of the Hon. Jas. A. Robb, Minister of Finance in the Dominion Government. Professor Rothney had been previously appointed, and is naturally not only familiar with educational conditions in general, but is also equipped technically as an educationist.

As only one paper has been received in connection with the Teachers' Competition announced in the last issue it is necessary to extend the time until September. The one paper received, however, will receive first consideration, not only for its promptness but its own intrinsic merit, even if we have to give four prizes instead of three. April 10th, as a matter of fact, hardly afforded sufficient time for teachers to make a survey of the local geography—economic and other—particularly with the ground covered with snow. But by September 1st we may hope to receive some more worth-while papers, outlining an actual lesson in class in "Quebec Geography". Consult the last number (January-February-March) for the rules.

The important letter of the Superintendent in this issue in regard to Arbor Day is of interest to teachers as well as school boards. As the distribution of the trees may be somewhat delayed, the official dates for Arbor Day will also be delayed in some cases. The official dates are as follows: Montreal region, April 29 to May 4; Three Rivers and Eastern Townships, May 5 to 11; Quebec, 13 to 18 May; Lake St. John, Chicoutimi and Matane, 20 to 25 May; Abitibi and Charlevoix, May 27 to June 1. With the fine opportunity to plant trees afforded by the Department of Lands and Forests we hope all teachers will make the most of the function.

STARS AND PLANETS

In the General Science paper for Grade X in the June Examinations, 1927, one question asked for a statement of the difference between a star and a planet. Ninety per cent of the candidates either answered wrongly or not at all. While it is quite true that astronomy is not mentioned as a subject in the course of study, nevertheless there is a certain amount of astronomical facts given in the senior text-book on geography and in the text-book on physical geography, as well as in the text-book on general science, and, if the moderate amount of astronomy is rightly taught, no pupil in the upper grades should fail to learn the difference between a star and a planet, to say nothing of other large facts of the science.

Geography deals principally with one planet, the earth on which we live, and with one star, our sun, without which we could not live on this planet. The class text-books also describe the solar system; and it is therefore possible, within the limits of the course of study, to give all high school pupils a fair working knowledge of the mechanism of the universe. The fact, indeed, that this knowledge can be conveyed to them is one more illustration of that importance in the development of national culture which we so constantly urge as at once the duty and the glory of the modern high school. In this twentieth century no person can be called truly educated who has no conception of the main facts of modern astronomy. Where is this elementary knowledge to be obtained, if not in the high school? Ninety per cent of the high pupils do not go forward to the university, and only a small percentage of those who do go follow a course in astronomy.

But no knowledge of real value can be obtained in the high school from mere questioning from the text-book. Direct teaching is necessary.

In this article we propose to offer an outline of the elements of astronomy which can be taught from the blackboard, in the hope that some teachers not already following the method may find useful hints for class lessons.

If the difference between a star and a planet is to be impressed upon the minds of pupils, the first step is to ensure that the meaning of the eight planets which revolve around the sun is made clear, and then to give such facts in regard to our sun as will enable them to realize that the thousands of *stars* they see every clear night are so many more *suns*. Three *planets*, also, were very brilliant in the sky all through December and January last—Mars, Jupiter and Venus. The fact that stars 'twinkle' and that planets do not, cannot be repeated too often, as it is a good help in recognizing the planets when they are visible.

For the teaching of the solar system, the largest possible circle should be drawn at the left end of the blackboard to represent the sun, and upon that circle write the statement that the sun is 1,300,000 times larger and 332,000 times heavier, than our earth. Then quite close to the large circle, draw four small circles, the nearest being the planet Mercury, and then in order Venus, Earth and Mars. About two feet away, a larger circle marked Jupiter, another two feet Saturn, and then still further away, Uranus and Neptune. Below each of the eight

planets place its average or mean distance from the sun, Mercury, 36 million miles; Venus, 67 million; Earth, 93 million; Mars, 141½ million; Jupiter, 483 million; Saturn, 886 million; Uranus, 1,782 million; Nepture, 2,793 million. Then, above each planet, give the (unvarying) time it takes for each to revolve around the sun: Mercury, 88 days; Venus, 225 days; Earth, 365 1-4 days; Mars, 687 days; Jupiter, 11.86 years; Saturn, 29.5 years; Uranus, 84 years; Neptune, 164.8.

The sizes of the circles might approximately indicate the different sizes of the planets. Of the four inner ones the earth is the largest; next comes Venus, then Mars and the smallest is Mercury. But as to the four outer ones, from Jupiter might be made 317 planets the size of the earth. Uranus could make 66 earths and Neptune 60 earths. Saturn is very large, the equatorial diameter being 74,100 miles, but its specific gravity is slight. Saturn would float if there was an ocean of water large enough to hold it.

So far, there is nothing on the blackboard but a number of stupendous facts. If the pupils were to take them on trust and duly memorize them, they might pass an examination (or they might not pass); but if the facts are to become real and vital to the pupils there is some *teaching* required.

If the Editor may be permitted a personal reference at this point, it is to say that from time to time he has been invited by the service clubs of Quebec—Rotarians and Kiwanians—to give "talks" on astronomy and geology at their luncheon, and has found by experience that nothing fixes the great facts of the sciences so well in the mind as to associate them with the names of the discoverers. Quite recently we found that a group of forty Grade VIII pupils would respond readily to the same method.

It took nearly two hundred years to found the modern system of astronomy in its chief features, that is, from Copernicus (1473-1543) to Sir Isaac Newton (1642-1727), and when we see how each great step was at first resisted in an enlightened age, we may realize how much *patience* as well as care is required to present the facts effectually to the minds of high school pupils.

Copernicus (1473-1543). Although several ancient Greeks had realized that the earth revolved around the sun, and not the sun around the earth, that knowledge was lost for over 1,500 years. Hence, when the learned monk, Nicolas Copernik, in the sixteenth century, found the true fact again, and proved it mathematically, the world was not ready for it. His book, *De Revolutionibus Orbium Caelestium*, was published on the day of his death, May 24, 1543, and his feeble hand could merely touch it. Copernicus made some very good observations with inadequate instruments, and his chief error was in supposing that the earth's orbit was purely circular, though even here he recognized that there were some facts which did not fit in, and was obliged to bring in the idea of epicycles to account for them. But the fact that the earth revolved around the sun was universally denied, not only by his own church, but also by Luther and Calvin, and in philosophical circles by the great Lord Bacon. Luther remarked that "Copernicus is a fool".

Tycho Brahe (1546-1603). This son of a Danish nobleman was destined to help forward the cause of astronomy by reason of his skill in inventing new means. of observation. How skilful he

was in invention is shown by the fact that when he was a student in Germany, and had his nose cut off in a duel, he invented a new one, and all his life carried about a cement to stick it on again when it became loose. Frederick II, King of Denmark, was so impressed with his ability that he gave him one hundred thousand dollars to establish an observatory in Denmark, as well as a pension. The place of the observatory was then called Uraniburg (castle of the heavens) in his honour. Among many of his inventions was a great quadrant, which required 20 men to lift it, and with which many most accurate and valuable observations of the movements of the planets were made. After the death of King Frederick, Tycho Brahe had a hard time with his successor, but the Emperor Rudolph of Bohemia gave him a new observatory at Prague, and this fact incidentally led to a very great advance in astronomy. Tycho Brahe, though born three years after the death of Copernicus, lived and died in the firm belief that the sun went around the earth daily. But at Prague he had engaged a young mathematician, who, while loyal to the observational work of Tycho Brahe, made deductions from the facts which are destined to live for ever.

JOHANN KEPLER (1571-1630). The assistant mathematician was this John Kepler. If ever man of genius suffered during his life, it was he. Readers of Carlyle's "Frederick the Great" (Vol. I, page 229), will remember the description of him in 1618 (several years after his great discoveries), following the army in the Thirty Years' War' and earning a few pennies to keep himself and his family from starving, by showing idle officers the views of the stars through a *camera obscura* of his own invention. Again, in Vol. 5, page 53, Carlyle says:—"Pleasant City of Linz; as readers may remember, Mr. John Kepler, long ago, busy discovering the System of the World (grandest Conquest ever made, or to be made, by the Sons of Adam) and his poor *Camera Obscura* set out, to get himself a livelihood in the interim".

Carlyle's statement as to the grandeur of Kepler's Three Laws of Planetary Motion is no exaggeration, but the real wonder of the discovery and reasoning behind them will not strike the mind at once. The mere statement of the laws may not be imposing, but they have grown in majesty with the progress of astronomy ever since. We have also to remember that more than a century had to elapse before the three laws were consolidated by Sir Isaac Newton in the conclusive Law of Gravitation. Kepler's laws were then found to be the *necessary* corollaries of gravitation. The first of Kepler's laws may be stated:

Planets move in ellipses with the sun in one of the foci of the ellipse.

The discovery that the orbits of the planets were ellipses instead of circles not only explained all the anomalies that troubled Copernicus, but has explained thousands of other facts of observation ever since. It is because of the elliptical form of the earth's orbit, for instance, that we are three million of miles nearer the sun in December than in June.

The second law reads:—

The imaginary line joining the sun and the planet sweeps over equal areas in the ellipse in equal times.

The best way to illustrate this law is to construct two triangles of equal *area*, but the one with a broad base and low altitude and the other with a less broad base and consequently with a greater altitude. The broad-

based triangle represents the earth's rapid movement when it is near the sun; the less broadly based one represents the slow movement when the earth is further away. An important geographical fact can be mentioned in connection with the two first laws. As the earth is three million miles nearer the sun in December, the summer in the southern hemisphere, for corresponding latitudes, is six per cent *hotter* than summer in the northern hemisphere. But the summer in the southern hemisphere is about a week shorter than ours. Why? Because as just stated, the earth travels faster when it is three million miles nearer the sun in December than in June. Taking approximately correct figures of the rate the earth travels in its orbit, the two triangles of equal area, but unequal altitude, will now be clear. In a certain day of December the earth will have traveled 600 miles in 30 seconds of time; in June it will have traveled only 480 miles in the same length of time.

The third law reads:—

The square of the time of the revolution of each planet is proportional to the cube of its mean distance from the sun.

This law can be indicated on the blackboard. The "times" of the revolution of the planets are given in the figures of their periods: 88 days for Mercury up to 164 years for Neptune. The nearer to the sun, not only is the period the shorter, but also the "rate" is the faster. Thus, the average rate of Mercury is 30 miles per second in its revolution around the sun, Venus 22 miles, Earth 18½ miles, Mars 15 miles, Jupiter 8 miles, Saturn 6 miles, Uranus 4 1-4 miles and Nepture 3 and one-third miles, and every planet exactly obeys Kepler's third law. Grades X and XI pupils should have no difficulty in grasping its meaning from the following problem:—

What would be the period of revolution of a planet 100 times farther from the sun than is the earth? Then, by this law, the earth's distance cubed is to the planet's distance cubed as the earth's period squared is to the planet's period squared. Or, taking the earth's distance as unity, 1 cubed is to 100 cubed as 1 year squared is to X squared. Hence, X equals the square root of 100 cubed, that is, 1,000 years. (To be stated in figures on blackboard).

Galileo (1564-1642) follows Kepler in extending the knowledge of astronomy, and is the first to use a telescope. Though his telescopes were little better than the field-glasses of today, he discovered four of Jupiter's moons. Even for this he was denounced as a heretic. Counting the moon of our earth as a planet, there were but seven planets known then, and "seven" was a sacred number. The whole world knows the story of his imprisonment for saying, with Copernicus and Kepler, that the earth and other planets went around the sun. Galileo, among other things, solved the chief problems of falling bodies and the laws of moving bodies to a certain extent. It seems strange today to think that, three centuries ago, learned men actually believed that a hundred pound ball fell to the ground a hundred times faster than a one pound ball. Yet Galileo had to convince them that both fell with the same velocity by actually dropping a hundred pound and a one pound ball at the same moment from the tower of Pisa. Both reached the ground, of course, at the same moment of time.

Sir Isaac Newton (1642-1727). It will be noticed that Sir Isaac Newton

was born in the same year that Galileo died. Newton had a much happier life than any of his four great predecessors —Copernicus, Tycho Brahe, Kepler, Galileo—and his great glory was to gather up their discoveries in the grand generalisation and explanation of Gravitation. Whether the story of the apple falling on his head, and suggesting the principle, is true or not, it is certain that he alone worked out the details completely before announcing the result to the world. The least ambitious of men, he was therefore most conscientious in the matter of giving any public announcement until absolutely assured of the correctness of his work. The story of the long delay before he gave forth the principle of gravitation cannot be repeated too often. When convinced of the general truth of his deduction of universal gravitation, and that it might be expressed in the form that every body, however small, must attract every other body with a force directly proportional to the product of their masses, and inversely to the square of the distance which separates them, he attempted to prove it by the force of the attraction of the earth and the moon. His calculation, however, showed that the agreement of theory and fact was sixteen per cent out. Placing the calculations in a drawer he devoted himself to other work for sixteen more years. Then, it happened that King Louis the Fourteenth of France had ordered the French physicist Picard to make a new measurement of a degree of latitude of the earth, and as this was done with great care it was found that a degree was 69.1 miles instead of 60, as previously supposed. Newton saw at once that this greatly increased the estimate of the earth's mass, and then the calculation renewed agreed with the theory.

In the nineteenth century the great Whewell wrote: "The great Newtonian Induction of Universal Gravitation is indisputably the greatest scientific discovery ever made, whether we look at the advance which it involved, the extent of the truth disclosed, or the fundamental and satisfactory nature of this truth".

Newton also made other important discoveries, as those concerning the nature of light, and in mathematics. The one other great mathematician at that time in Europe was Leibnitz, and when Newton died the Queen of Prussia asked Leibnitz what was the position of Newton in the history of mathematics. Leibnitz replied, "Madam, of all the great advances in mathematics from the earliest recorded times unto the present, Newton is responsible for more than half".

But at the end of his life, how did Newton estimate his own work? "I know not what the world will think of my labours, but to myself it seems that I have been but as a child playing on the seashore; now finding some pebble rather more polished, and now some shell more agreeably variegated than another, while the immense ocean of Truth extended itself unexplored before me."

The poet Pope wrote the inscription for Newton's tomb in Westminster Abbey:

"Isaacus Newtonus
Quem Immortalem testantur Tempus,
Natura, Cœlum.
Mortalem hoc marmor fatetur.
Nature and Nature's Laws lay hid in
Night,
God said, Let Newton be! and all was
Light."

The Latin portion is philosophically even better than the English. One

word more on Newton. Einstein himself has taken the trouble to give an address quite recently to contradict the absurd notion that the doctrine of "relativity" has "overthrown" Newtonian Astronomy. It has not. There has been advance since his time, particularly as to the nature of Light, but Modern Astronomy was established and consolidated by Sir Isaac Newton

We now turn to some of the advances since Newton which are either of cultural value, or have a direct bearing upon the teaching of geography.

It has been mentioned that Galileo, with his small telescope, discovered four of Jupiter's moons. Many years later a Danish astronomer, Roemer, was examining these moons, and had recorded their "periods" around Jupiter. Six months later he again examined them, and to his surprise found that each was exactly 16 minutes and 36 seconds late. This puzzled him for a day or so, and then he remembered that, six months previously, Jupiter and Earth were on the same side of the sun and were now on opposite sides. The light from the moons had to travel now, not the distance from the earth to Jupiter, minus the distance from the earth to the sun, but the whole distance of Jupiter to the sun, *plus* the distance from the earth to the sun. The extra distance was, indeed, the whole diameter of the earth's orbit. Up to this time, scientists had been convînced that light required "time" to travel, but no direct means of measuring it had been found. Measuring by the extra distance, Roemer determined the velocity of light at 190,000 miles per second. Considering that the distance of the earth from the sun was not as accurately known then as it is now, the determination was very close. In modern times the velocity of light has been measured with great accuracy by electrical means, and the most recent figure is 187,372 miles per second (Michelson).

The velocity of light is the only convenient measuring rod for the distant stars. But take first two planets. The rays of light from the sun take eight minutes and some seconds to travel the 93,000,000 miles to our earth, and about three hours to reach Neptune, which is two billion, seven hundred and ninety-three million miles away. But these are merely planets of our solar system. The very nearest star (fixed and twinkling star) we see in the heavens at night is so distant that the light which strikes our eye left there over four years ago. Again, there are stars so distant that the light which reaches us at night left them when Julius Cæsar was discovering how Gaul as a whole was tribally divided, or even further back when Joseph was chief minister to Pharaoh. Hence, astronomers use "light-years" as their measuring rod. Taking the volocity of light as 186,000 miles per second, the figure used until recently, and remembering that there are 31,536,000 seconds in a year, the number of miles in a "light-year" is 5,765,696,000,000.

Up to the year 1781 there were but six planets known in our system—Mercury, Venus, Earth, Mars, Jupiter and Saturn—because these are all visible to the naked eye. But on March 13, 1781, Frederick William Herschel, a musician living in England, discovered Uranus through the telescope. As a musician, Herschell studied the mathematics concerned in music, and by this means became interested in astronomy. He and his sister Caroline made a telescope of their own. His discovery of Uranus immediately brought him fame and honours, and George the Third gave him a house

near Windsor and a salary of two hundred pounds per annum to pursue his researches. He made many more discoveries during his long life, recording over 800 double stars and 2,500 nebulae.

This made seven planets, but over sixty years later (1846), the eighth was discovered. This discovery illustrates two things, (1) the reality of the force of gravitation and (2) the manner in which astronomers work. In our list of the planets it will be seen that Uranus takes 84 years to go around the sun and Neptune takes 164 years. Now they can very seldom pass one another, and when we consider that Neptune is over a billion miles farther from the sun than Uranus, one might think that they would have very little to say to one another! But shortly before 1846, astronomers had observed with their remarkably accurate instruments that Uranus had been going a little out of its course. The amount that it was out was two seconds of arc, a mere trifle to the rest of us, but not to the astronomers, who considered it "intolerable". Hence, two astronomers, Adams at Cambridge in England, and Leverrier at Paris, went to work independently to find, by mathematical calculation, where the big body was that was disturbing Uranus. Adams was a few weeks ahead in his calculations, but the Astronomer Royal to whom he sent his directions to look for the new planet, was careless and did not search the heavens. Leverrier, however, had a friend at the Berlin Observatory (Galle) who was much more prompt, and the planet Neptune was found at that exact part of its orbit which both Adams and Leverrier had calculated that it would be, and its movements have been followed ever since. Incidentally, we may add that Adams of Cambridge was the uncle of a former Principal of Bishop's University of the same name. Uranus, though sixty-six times larger than the earth, and Neptune, sixty times larger, are both invisible to us, except through the telescope. The discovery of Neptune is one of the most majestic illustrations of the methods of science, as well as a perfect proof of the Newtonian Induction of Universal Gravitation. Adams and Leverrier tracked Neptune on the principle that if gravitation were true the body disturbing Uranus would be found where it was found.

Since 1846 the most romantic discoveries in astronomy have been made with the spectroscope, that instrument enclosing glass prisms which break light up into its component parts and analyse chemically gases and metals when they are in the state of vapor. With the spectroscope many of the elements of the earth have been discovered in the sun, and elements found in the sun are afterwards found on the earth. Thus, in 1868 Sir Norman Lockyer discovered by the spectroscope a gas in the sun which he called helium (from helios, the sun), and it was not until 1895 that it was discovered in our planet. It was then found only in very small quantities, and up to the 1914 was so expensive that a cubic foot cost some six dollars. In the war, however, it was suddenly discovered in great quantities in the gas-wells of Texas and Alberta. It was then needed for the dirigibles in the war, and was produced at a cost of a few cents per cubic foot.

There are many interesting things about the chemistry of the sun (and the distant suns—stars) as well, but we have space for one more only. When there is an eclipse of the sun the photographs of it show that the surface is continually throwing off vast streamers of vapor, reaching all the way from ten thousand to two hundred thousand

miles in height. The spectroscope shows that these streamers consist chiefly of burning hydrogen and the metal calcium, in the state of vapor; and the limestone of earth, of course, consists of calcium, carbon and oxygen. Incidentally, one more proof that the earth itself was once part of the sun.

Does this very brief outline of the development of modern astronomy represent too much supplementary material for the high school pupils, as an aid in general and physical geography —for the proper understanding of the tides, the seasons, etc.? It certainly would be too much if administered in one dose. But if the essentials were rightly conveyed from time to time, this minimum of definite knowledge should serve to illuminate the astronomical parts of the class text-books on geography, and very possibly enable the brighter pupils, by awakened interest, to carry the knowledge beyond the examination goal—that fatal point where so much is forgotton afterwards.

There are two small books which would be of use to the teachers in this connection. One is Professor Chant's "Our Wonderful Universe" (Ryerson Press, Toronto), and the other is R. J. Harvey-Gibson's "The Master Thinkers" (Thomas Nelson & Sons, Toronto). The former is an excellent summary of astronomy, and the latter gives interesting accounts of the lives of the great discoverers. More advanced works, and more methematical, are Young's General Astronomy (Ginn & Co., New York) and Moulton's Introduction to Astronomy (Macmillan Co. of Canada, Toronto).

To sum up the minimum amount of knowledge that every Grade XI pupil should learn in the two last years:—

1. We know of eight planets only, and see but five of them with the naked eye: Mercury and Venus as evening and morning stars, because they are between us and the sun, and Mars, Jupiter and Saturn as "all-night" ones, because they are farther away than we are from the sun. The sixth planet, Earth, we live upon. Uranus and Neptune are visible only through powerful telescopes.

2. The millions of *stars* are burning bodies like our sun, some of them thousands and even millions of times larger than our sun. Some of them may have planets revolving around them, but no telescope has ever discovered them. They are too far away.

3. The eight planets of our system revolve around our sun under the principle of gravitation. The sun is 746 times heavier than the whole eight planets together, and it is in virtue of this great "mass" that the sun controls the planets.

4. The law of gravitation is readily stated. Thus, in the case of the sun and the earth, the mutual "pull" of the two bodies around their common centre of gravity is the mass of the sun multiplied by the mass of the earth in tons, and divided by the distance between them squared in miles, for a ton-mile result. But the greatness of the force is not so readily grasped by the imagination. Astronomers simplify it as follows: Imagine that there is no force of gravitation; then to hold the earth to the sun as it is held, it would be necessary to cover the whole earth with steel rods, each half an inch in diameter and half an inch apart, and extend these rods to the sun.

5, That gravitation is *universal* is also a conception to be conveyed, affecting not only the gigantic and distant suns, but also the meteorites which strike our atmosphere and dissolve in flame.

J. C. S.

HINTS ON THE TEACHING OF FRENCH

By Miss L. E. Tanner

It frequently happens that despite much repetition and conscientious teaching our pupils persist in confusing the parts of speech, adjectives being called pronouns; pronouns, adjectives; prepositions, conjunctions; etc. In order, therefore, to appeal to the memory and to the judgment of the pupils a lesson in which the method of *contrast and comparison* is employed will be sure to be satisfactory, inasmuch as the subject matter will have been presented in so striking, so clear a manner, that confusion cannot possibly exist, unless, indeed, the lesson has proceeded too rapidly. This method of presenting a lesson on the simple notions of the parts of speech is suited to the understanding of pupils of grades IV and V, and it is all the more disappointing to find puplis of grades VII, VIII, and even of the higher grades, unable to say whether a certain word is an adjective or a pronoun, an adjective or an adverb.

Certain facts about adjectives and pronouns may be given to the pupils, inasmuch as they are not likely to furnish them, at the beginning of the lesson. For instance, just as Shakespeare say of us, that "each plays many parts" on the stage of life, so a word which at one time is an adjective, may play the part of a noun, or of a pronoun, but no confusion need exist because the *position* of the word almost invariably shows what part it is playing in a sentence; tell them that there are six kinds of adjectives, and six kinds of pronouns, and then proceed to classify the various kinds of adjectives and pronouns. Ask them to help in this classification; it might be well to base it on a frequency basis, the most commonly used adjectives being placed first in the list—but of course, any order will do; however, to facilitate memorization, keep to your original order Insist upon right spelling and correct pronunciation of each word, thus applying the knowledge which has been gained from a study of the sounds, as given in the phonetic chart.

As each kind of adjective is discussed with the pupils, it takes its place on the blackboard; a discussion somewhat in these terms is within the range of the vocabulary of a pupil of grade V, so that there is no necessity for using English.

DISCUSSION EN FRANCAIS

Dans une langue il y a des mots pour indiquer les *objets*. Nommez ceci (montrant une boîte, la fenêtre, etc.) Vous avez dit le nom de ces objets; boîte, fenêtre, etc. sont des *noms*; mais ces noms se rapportent (belong to) à des objets qui ne sont pas tous pareils; ainsi, la boîte blanche, la boîte rouge; quelle différence y a-t-il entre ces boîtes? Une est blanche, l'autre est rouge; les mots *blanche, rouge,* sont des adjectifs qualificatifs (ka-li-fi-ka-tifs) et nous savons qu'ils sont féminins si le nom est féminin; masculins, si le nom est masculin; pluriels, si le nom est pluriel;—vous vous rappelez, n'est-ce pas, la grande règle de l'*accord*? En anglais, cette règle de l'accord n'est pas si généralement observée qu'en français; soyez certains de toujours faire attention au *genre du nom,* car c'est le nom qui détermine le genre de l'adjectif qui l'accompagne; ainsi, l'on

dit, la table; quel est le genre du mot qui accompagnera table? Féminin, vous dites? Oui, c'est bien cela, le mot sera féminin; est-ce correct de dire:—"la table est petite? Quel est l'adjectif dans cette phrase? Pourquoi est-ce *petite* et non pas *petit*? (Ce n'est pas perte de temps que de vous arrêter là-dessus; c'est étonnant combien peu cette règle de l'accord est comprise, ou du moins, observée.)

(2) Special attention should be paid to the "adjectif démonstratif". Call to the pupils' notice the fact that there is only *one* such adjective, show how its forms "cet, cette, ces" are variations of the same word, "ce." Inasmuch as you have shown that the "adjectifs qualificatifs" are as numerous as "the sands of the sea shore" the contrast between the inconspicuous "ce", so much alone, so little, and the adjectives which accompany the noun to to give it a quality, is so sharp, that an impression will surely be made.

Grades four and five enjoy the "ce" game. Point to "la porte", "le mur", and have pupils replace the outstretched index finger with the required from of the "adjectif démonstratif". Later, a child having been sent out of the room, agree upon the choice of, say, "cette gomme." Pointing to "la pendule, the child says "est-ce cette pendule? est-ce ce mur? est-ce cette fenêtre?" to which questions the class reply: "non, ce n'est pas cette pendule; ce n'est pas ce mur; ce n'est pas cette fenêtre", etc. Lasting impressions are made in just these ways, for interest is awakened, interest so deep that children are made to forget that they are working hard. It is French without tears... Exercises such as these improve the teaching of Grammar, whether it be French or English; there is a transfer of knowledge.

(3) The numeral adjectives are shown to have the subdivisions which show whether the adjective of number refers to the quantity only, or to the number, etc.

(4) The possessive adjectives follow: "le livre à moi" being changed to "mon livre"; la plume à toi"; to "ta plume", etc.

(5) The "adjectifs indéfinis" are very often vaguely known; they will be remembered if you show how an idea of *number* is attached to them, but *indefinite* as to the number, not exact. For instance:—Quand je dis, j'ai quatre pommes; combien en ai-je? Un nombre *exact*, quatre; mais, quand je dis; j'ai plusieurs pommes, personne ne sait si j'ai quatre pommes, ou dix pommes, ou vingt pommes; plusieurs est cependant un mot qui indique un certain nombre, mais il indique cela d'une manière indéfinie; c'est un adjectif *indéfini*. Montrez comme il mérite bien son nom; donnez d'autres examples: tous les bonbons; toute la crème; tous les livres, etc. Combien de crème ? Une tasse de crème? Une pinte de crème? L'on n'en sait rien; on sait seulement que j'ai mangé *toute* la crème, etc.

Taken up in this way a lesson is invariably interesting; while developing the lesson, keep every pupil within your range of vision; endeavor to have each pupil contribute something towards the building up of your black board data; frequently question the timid, give them self-confidence by asking them something which you feel sure they can answer; on the other hand, humble the over-confident by an occasional question which will show them that there are still a few things which you can teach them.

(6) Combien d'adjectifs démonstratifs y a-t-il? Eh bien, il y a une autre

sorte d'adjectif qui se trouve seul, c'est un adjectif qui fait une question. (Montrant deux livres). Je mets un livre sur le pupitre, un autre sur le rebord de la fenêtre. Quel livre est sur la fenêtre? Quel livre est sur le pupitre? Ce mot qui fait la question, est le mot que nous voulons, c'est l'adjectif interrogatif (apprenez à l'épeler correctement). Remarquez qu'il y a toujours un point d'interrogation non loin de ce mot "quel"; Marie, vous savez ce que c'est qu'un point d'interrogation, n'est-ce pas? Et maintenant vous savez ce que c'est qu'un adjectif interrogatif. Il y a seulement *un* adjectif interrogatif, c'est le mot QUEL. Naturellement, comme tous les autres adjectifs il est quelquefois féminin, quelquefois pluriel, etc. Regardez comme il change quand il devient féminin: quelle, etc. Le son est le même, toutefois. Prononcez: Quel; quels; quelle; quelles. TOUJOURS le même son; pourquoi est-il épelé différemment A cause de la règle dont nous avons souvent parlé, la règle de l'ACCORD, etc., etc.

An exercise might follow (with young pupils) such as the following:— Remplacez le, la, les, par le mots "quel", le faisant *accorder*—

(a) La table; le chien, le garçon; les dames; la poule.

Quelle table? quel chien? quel garçon? quelles dames? quelle poule?

(v) Dans l'exercice ci-haut, remplacez le, la, les, par "ce", le faisant accorder.

(c) Remplacez par un adjectif qualificatif.

Young pupils enjoy this game: Have them stand when the "adjectif interrogatif" is feminine:—

(a) Quel garçon? (all remain seated).
(b) Quels pupitres (ditto).
(c) Quelle porte? (All stand), etc.

The blackboard should now show the following list of adjectives:—

LES ADJECTIFS

(Sortes)		(Remarques)
(a) Qualificatifs.	—	Ils sont très nombreux. ACCORD.
(b) Démonstratifs (a) cardinaux.	—	Un seul. ACCORD.
(c) Numéraux.—(b) ordinaux.	—	La seule sorte qui ait des sub-divisions.
(d) Possessifs.	—	
(e) Indéfinis.	—	Idée vague "indéfinie" de nombre. Presque toujours pluriel: "plusieurs"; quelques", etc.
(*f*) Interrogatifs.	—	Un seul comme (b). ACCORD.

A lesson on the six kinds of pronouns might profitably be taught in this way; a comparison between the adjectives and the pronouns will then make the subject very clear. The final lesson would show parallel columns, one containing the six kinds of adjectives, the other the six kinds of pronouns. Bring out clearly the fact that the pronoun accompanies the *verb*; the adjective is usually followed by a noun. Confusion may arise for some time between "se", pronoun, and "ce"; always differentiate it by its position, then give its name.

These hints are given here for the use of young teachers who may not have discovered for themselves just how easy the teaching of adjectives and pronouns may be made by endowing each part of speech with its own personality in a striking way.

MAKING ARITHMETIC PRACTICAL AND INTERESTING

By F. H. Spinney,

Principal Alexandra School, Montreal.

Third Grade.

Teachre's Preparation.

At least, 90% of Third Grade arithmetic should consist of Oral or Sight work. Thorough preparation on the teacher's part is necessary to maintain the permanent interest of the pupils. Such preparation is more attractive than "correcting" a host of mistakes in written work. Also mistakes in written work will thus be reduced to a minimum.

The teacher's preparation should include careful consideration of individual capacity. Sam may find 4×7 a difficult example: while Harry can readily determine the product of 20 and 12. Unless the teacher adapts the work to the individual pupil, Sam will become discouraged and Harry will be bored to desperation These conditions are apparent in many classrooms.

Wide diversity in capacity presents a difficult problem to the teacher. The writer has found that the best solution of the problem is to divide the class into three groups — ranging from the dullest pupils in Group I. to the brightest pupils in Group III. If blackboard space is available, the groups are sent to the board in turn. To illustrate briefly, the pupils of Group I. go to the board first, and the teacher dictates:

5×7
6×5
3×10
6×8 etc.

The pupils write the answers as each question is dictated. After ten easy examples have been worked, the teacher says, "Now, if you fail to write the correct answer promptly, you must take your seat."

One by one, the pupils leave the board, the last pupil failing with 8×9.

The teacher thus determines who are the brightest pupils in Group I.

The pupils of Group II. go to the board, and the teacher adds variety to the exercise by dictating:

1 gal. = 8 pints
2 gals. = ?
4 gals. = ? etc.

After a few such questions have been worked, the difficulty is gradually increased, until the brightest pupil of Group II. fails with 13 gals = ?

The pupils in their seats may observe the work being done at the board, or they may do the same work on paper, and the teacher, as she dictates the questions, will move around the room to observe how such work is being done.

When the pupils of Group III. go to the board, the teacher dictates a "bill', which the other pupils write on paper:

8 apples at 5 cts.
12 bananas at 4 cts.
15 pears at 5 cts.
3 lbs. candy at 25 cts.

The teacher emphasises the conditions that this work must be done *very neatly*. Pupils who do untidy work at the board will take their seats. To work at the board is presented as a *privilege*.

The work assigned to the last group should be made so attractive that the pupils of Groups I. and II. will be eager to be promoted to Group III. The pupils of Group III. may be permitted to assist the pupils of the other groups; they may have supplementary work, sometimes of their own choosing; they are classed as "Honour Pupils", and the teacher depends on their honesty in correcting their own mistakes, etc.

In order to add greater interest to the lessons, the pupils are asked to ascertain at home the prices of many articles of domestic use. They find that eggs cost 40 cents a dozen. The pupils of Group I. are sent to the board, and the teacher dictates:

1 doz. eggs costs 40 cts.
½ doz. eggs costs?
2 doz. cost?
3 doz. cost? etc.

After five such examples have been dictated, pupils who fail to write the correct answer promptly rake their seats. The last pupil fails with,—13 dozen cost?

The pupils of Group II. try the following:

6 cts. will buy 1 lb. sugar.
18 " " " ?
30 " " " ?
3 " " " ?
9 " " " ? etc.

To Group III. the teacher dictates:

12 eggs = 1 doz.
6 " = ?
3 " = ?
24 " = ?
30 " = ? etc'

The brightest pupil fails with,—150 eggs= ?

REPRODUCTION OF QUESTIONS

Reproduction of questions, as suggested for Grade II. may be undertaken in Grade III. with even better results, on account of the possibility of greater variety.

The teacher dictates the following question:

A man had $100. He spent $20. on Monday and $30. on Tuesday; how much had he left?

The pupils readily give the answer, $50. which the teacher writes on the board.

"Now, what was the question?"

The teacher will write on the board the best reproduction given by the pupils. She will then dictate a second question and write the answer. The best reproduction will be written on the board. Both reproductions will then be erased, and the pupils will be asked to reproduce the two questions on paper. After examining the written work, the teacher will announce the names of the pupils who have written the questions correctly.

Under the writer's direction, a pupil of Grade III. correctly reproduced four questions on paper, and the majority of the class reproduced two without an error.

Such an exercise leads to a better understanding of the questions, and also furnishes excellent practice in English. There is no limit to the number of questions that may be used for reproduction. The interest of the pupils will depend upon the resourcefulness of the teacher. The teacher's leading aim should be to make the lessons progressive—each one being just a little more difficult than the preceding lesson.

AROUSING CURIOSITY

In order to maintain the permanent interest of the pupils, many variations will be necessary. Few "explanations.. should be given. When a question puzzles every member of the class, the teacher will stimulate curiosity by remarking, "That question is too hard; we'll try it again tomorrow." On the following day she will repeat the question and observe the result.

"John has some marbles. How many do you think he has?"

Guessing is allowed to stimulate curiosity.

"He has three pockets with 13 marbles in each pocket."

The pupils hands go up, one by one. When nearly all the pupils have raised their hands, the teacher asks for the answer.

"Now for a harder one!"

Everybody is alert at that announcement.

"Harry had some marbles. He gave 12 to Fred, 13 to Tom, and had 10 left. How many marbles had he?"

The lesson may end with a real "puzzle":—

Tom had some marbles. He lost half of them on Monday, and half of the remainder on Tuesday; then had 7 marbles left. How many had he at first?

No one can give the answer. "Well," says the teacher; "time is up; we'll try that again tomorrow."

What will happen tomorrow will depend on how much curiosity the teacher has aroused by her method of presentation. Often the writer has pretended to forget the question until reminded by a pupil:—"You did not ask us that marble question."

"What was it?" I asked.

To my great surprise, one pupil quoted the exact words of the question as given on the previous day.

Grade III. pupils do not "reason". They determine the nature of the operation involved by the appearance of the problem. The writer recently assigned the following problem to the pupils of Grades III., IV. and V:—

A man had $789, after spending $298. How much had he at first?

90% of Third Grade pupils subtracted $298 from $789. as also did 50% of the Fourth Grade and 50% of the Fifth Grade. Why? Observe the question carefully, and draw your own conclusion. Try the problem with your own class, in a formal way, without giving any suggestions.

One reason why the pupils failed was because they had no interest in the man with the $789. A so-called problem is not a real problem to a pupil unless he has real interest in the solution.

In that same Third Grade, the writer asked orally: "How many coppers have I in my pocket?"

There were numerous guesses, but no one estimated the correct number.

"Well, I'll put three of the coppers in this box on the desk. Now I have 13 left in my pocket. How many had I in my pocket at first?"

The pupils were asked to write the answers on slips of paper. 30 pupils in a class of 32 wrote the correct answer. Why? Compare the circumstances with the written problem.

Many teachers waste many hours writing "problems" in which the pupils have no interest.

Instead of wasting time in writing "problems" on the board, the teacher should strive to secure the greatest possible rapidity in the fundamental operations. Rapid work never fails to hold the interest of the pupils. I distinctly recal how eagerly I welcomed that period of the day when my most resourceful teacher gave us an opportunity to tax individual capacity to the utmost in rapid addition and multiplication—some of the examples from oral dictation, others in columns on the blackboard. The pupils who excelled in that work were permitted to hand in original examples to be assigned to the class. It gave me a thrill when one of my examples was thus assigned.

Several of the pupils mastered the Multiplication Table to 12 times 12. The teacher did not stop at that limit; but permitted us to continue with the multiples of 13, 14, 15. etc. individual capacity being the only limit. This method prevented the bright pupils from becoming bored while the duller pupils were being drilled on the regular class work. It was an inspiration to recite "16 times" up to 16 times 10 without an error. The reward for such an accomplishment was the opportunity to advance to "17 times".

It is well for a teacher to recall the days of childhood and determine what methods of instruction were most attractive. Such a recollection will improve her patience and her sympathy, and lead to a greater variety of method in conducting arithmetic lessons.

CO-OPERATION OF THE HOME

Weighing and measuring will furnish much practical work for the pupils of Third Grade. If scales are available in school, the pupils may find the weight of many objects in the room. The interest will be increased if the pupils are first required to estimate the weight on small slips of paper on which they also

record their names. The object is then weighed, and the teacher announces the names of the pupils whose estimates approached the actual weight.

If scales are available in the homes, the pupils are asked to ascertain the weight of various objects and report to the class on the following day. If large scales are available, the pupils should find their own weight, and note the increase from month to month.

Harry's height is 4 ft. 2 inches, and John's height is 3 ft. 11 inches. The pupils will be asked to determine the difference, also to change the measurements to inches.

The pupils find that the classroom door is 7 ft. high and 3 ft. wide. They are asked to find the height and width of doors at home, also of windows, window-panes, etc. All this work will be optional; but the zealous praise of the teacher bestowed on those pupils who comply with her request will be a stimulating reward. The more resourceful the teacher, the higher the esteem in which she is held by the pupils and the more eager they are to win her words of commendation. The resourceful teachers finds intense pleasure in thus co-operating with the pupils in such practical and interesting work.

DEPARTMENT OF EDUCATION

ARBOR DAY

QUEBEC, February 20th, 1929.

To the School Commissioners
and Trustees of the Province,
and Secretary-Treasurers.

DEAR SIRS:—

The Honourable the Minister of Lands and Forests, in a letter dated February 6th, has offered as a free gift to every rural school corporation desirous of accepting them, a certain number of young trees from the Berthier nurseries to be planted at each school.

You will no doubt realize that this opportunity is one to be welcomed, not only for the beautifying of your school grounds, but as a practical lesson in arboriculture; the trees being good friends to us, and as such deserving our care and protection in return.

We earnestly desire that this tree planting shall be a success in all the Province, and to this end we need the co-operation and goodwill of all concerned, but in particular that of the school boards and secretary-treasurers.

It is the intention of the Hon. Minister of Lands and Forests to furnish at least two trees for each school, making a total of about 15,000 in all. Needless to say this cannot be done efficiently without the assistance of the school boards.

The Government will furnish the plants free, but the transportation charges should be borne by the school boards. This will be at the rate of about $1,00 per dozen plants.

Further, it will be necessary for the secretary-treasurer or some other person to be at the station upon the arrival of the trees, in order to receive them and to convey them all to a safe place. Then a commissioner or trustee, or some other person duly appointed for each district, should obtain from the secretary-treasurer the number of trees required for each district, and become responsible for their care until the time appointed for the planting.

The tree planting in each district should be done by the teacher, aided by her pupils, in the presence of the commissioners or trustees and ratepayers who desire to take part in the ceremony. Invitations should be extended to all the parents by the teachers and their pupils.

Perhaps the Mayor or some other leading citizen might consent, upon the invitation of the school board or the teacher, to preside at the planting at the village school, while a member of the board or a prominent resident of each of the other districts might do the same for the smaller schools. It would be quite in order if the teachers arranged a short programme with songs and recitations appropriate to the celebration of Arbor Day. A more elaborate programme might be arranged for the village school or the largest school in the municipality than for the smaller schools. This could be held in the forenoon when the entire municipality would be able to be present, the planting in the smaller districts taking place in the afternoon.

Such an occasion as this, on which will be represented the school, church and municipal bodies alike, should assist in promoting the cordial relations which ought to exist in any community, and should contribute largely in creating a keener interest in the schools, and thus stimulate the efforts of the teachers and their pupils.

I therefore ask the secretary-treasurers to present this letter to their school boards, and to have the members adopt a resolution regarding this offer, and those municipalities desirous of benefitting their schools by it should make application to my Department without delay, stating the number of schools, and the name and address of the person to whose care the trees are to be sent. These requests will be forwarded to the Hon. Minister of Lands and Forests, who will see that the trees are delivered at the proper time, and who will at the same time send instructions for the care of the trees on their arrival, and the correct method of planting them.

This circular will be printed in the Educational Record for May in order that the teachers may be informed of this special Arbor Day ceremony which we are organizing for 1929, and to give them time for the preparation of a suitable programme.

Once again, I count upon the goodwill of all, and especially the secretary-treasurers, for the success of the tree planting in each school municipality.

Yours truly,

CYRILLE F. DELAGE,
Superintendent.

BOOK NOTICES

Handbook to Elementary Chemistry. For High Schools. By Nevil Norton Evans, M.Sc. Professor of Chemistry, MeGill University. 107 pages. Price: $1.00. Toronto: W. J. Gage & Co., Ltd.

Quebec teachers of chemistry need no introduction to Professor Evans. This Handbook is for them and not for the pupils, but the Professor too modestly says of it in the Preface that "the teacher who has a thorough grounding in chemistry and pedagogy will not need" it, but rightly adds, "although it can save him some time by providing answers to the problems given in the text-book." It will certainly be found useful and suggestive throughout, even by experienced teachers. Explaining the classification of the elements by the Periodic Law, according to the atomic weights, Professor Evans says:—

"When we wish to classify a large number of objects (or phenomena, or ideas), we choose some characteristic common to all, and, if possible, one that can be accurately measured, and then carry out our classification in accordance with the various values of this criterion. The reason that it is impossible to classify odors, or religious views, or beauties satisfactorily, is that they do not possess characreristics that can be measured. We cannot determine that this odor is 57.6; or that the beauty of that person's nose is 23, while the other is 27, and therefore a little greater." But the classification of the Periodic Law is based on properties than can be measured, and have therefore "proved exceedingly useful".

Unwritten History, Book I, The Age of Stone. By Henry Rushton Hall, with illustrations by H. W. Wanslaw. 186 pages. Price 75 cents. Edinburgh, London and Toronto: Thomas Nelson & Sons, Limited.

The Palaeolithic (Old Stone) and Neolithic (New Stone) periods of early Man are exceedingly well covered in this book. The black-and-white illustrations are chiefly those of the implements of early man, showing their development from Eolithic times through Strepyan, Chellean, Acheulean, Mousterian, Aurignacian, Solutrean and Magdalenian times down to the Azilian-Tardenoisian which immediately preceded the New or Polished Stone age before the age of metals.

The Master Thinkers: Vignettes in the History of Science, with portraits. By R. J. Harvey-Gibson, C.B.E., LL.D., M.A., D.Sc. Emeritus Professor of Botany in the University of Liverpool. 238 pages. Price 75 cents London, Edinburgh and Toronto: Thomas Nelson & Sons, Limited.

Those of us who have read somewhat widely in the history of Science can willingly recommend this admirable little book. The first two chapters are naturally concerned with the discoveries of the early Greek thinkers. The third chapter is entitled "The Herald of the Dawn", being concerned with Roger Bacon. The fourth deals with the actual dawn of modern science in Copernicus, Paracelsus and Tycho Brahe.

The fifth chapter deals with the "Three Immortals". Kepler (1572-1630), Galileo (1564-1642), Newton

(1642-1727), and the remaining five chapters with the other vast strides up to the present time. Not only are the successive steps in modern knowledge, and particularly in astronomy and chemistry, clearly shown, but they are happily associated with biographical details of great interest in regard to the master thinkers.

The Parts of a Cottage. 36 pages. —rice (in England) 7d.

The Parts of a Farm. 36 pages. Price 7d.

The Parts of a Manor House. 48 pages. Price 8d.

These three booklets, written and illustrated by Sidney H. Heath, Art Master, Plymouth College and author of "Pilgim Life in the Middle Ages", are a happy blend of English history and architecture. The drawings are excellent, and the reading matter adapted to them instructive in details. Published by George Philip & Son, London, England. Canadian agents: Toronto, The E. N. Moyer Company.

Geography and Our Need of It. By J. Russell Smith, Professor of Economic Geography at Columbia University. 43 pages. American Library Association, Chicago.

This is one of a series of pamphlets published by the American Library Association under the general title of "Reading with a Purpose", and which retail at 35 cents in paper. The object of the series, covering all school subjects, is to serve as a guide to the best books in the field covered. Professor Smith deals with the various features of geography, political, physical, economic, human, organic, and indicates the principal literature in each.

Laura Secord. By Blanche Hume. Ryerson Canadian History Readers. 32 pages. Price 10 cents.

Prairie Place Names. By Edna Baker. Same series. 28 pages. Price 10 cents.

Two additions to the Canadian History Readers, edited by Dr. Lorne Pierce and published by the Ryerson Press, Toronto. The series continues to afford bright and interesting supplementary reading for pupils and teachers. Miss Hume tells the story of Laura Secord vividly and also with strict adherence to the original records, always so necessary in historical writings. Miss Baker tells the story of the Prairie Place Names in a most interesting way. Each reader contains drawings by C. W. Jefferys.

Practical and Literary English. By George M. Jones and Arthur Yates. 458 pages. Illustrated. Price $1.50. Toronto: J. M. Dent & Sons, Limited.

This book is intended for class teaching, but even where it has not been authorized as such it is most useful for teachers. The literary and the practical sides of the teaching of English are kept well in view throughout, so that the teacher receives, on the one hand, many suggestions in the way of making the historical development of our language interesting, while on the other hand the essentials of good grammar and right pronunciation are emphasised. The Introduction deals in a happy manner with the reasonsfor the study of good English. Part I is

divided into six sections, naemly, Origin and Growth of Language, History of the English Language Through Pictures, Growth of the Individual Vocabulary, Oral English, Effective Expression, and the Beauty of Words, while each section consists of about half a dozen lessons. Part 2 deals with the Sentence and the Paragraph, Punctuation and other practical matters of grammer, from useful points of view which are supplementary to the more formal grammar. The illustrative literary selections throughout are excellent.

CONIFEROUS LEAVES VALUABLE

Investigation shows value of forest litter to be enormous

The fertilizing value of forest litter, composed of fallen leaves and twigs, has long been recognized in Europe, but in this country where we have not had to grow our wood, little thought has been given to the soil on which the trees grow. With the disappearance of the virgin stands and our ultimate dependence on second growth secured by either natural or artificial means, every factor which affects the rate of growth of the timber becomes important.

A study of the forest leaf litter deposited by red and jack pine in Michigan has just been completed by the United States Service and it showed that on the average, the annual deposit of needles per acre weighed 2,257 pounds air dried and 2,100 pounds oven dried. Most of the needles fell between the middle of June and the middle of October.

From the chemical analysis of samples of the litter it was found that the accumulation on an acre in one year contained from 8 to 16.5 lbs. of nitrogen, 9.9 to 21 lbs. of calcium, 2.1 to 3.5 lbs. of phosphorus, 2.6 to 3.5 lbs. of potassium and 5.6 to 6.7 of sulphur.

The nitrogen content alone averaged 15 lbs. per acre, which is from one sixth to one eighth of the amount of nitrogen collected by a crop of alfalfa.

In an unburned forest there is an accumulation of three or four years undecomposed and if a fire destroys this, it robs the soil of from 40 to 60 lbs. of nitrogen per acres, to replace which would require the application of from $9.00 to $13.00 worth of sodium nitrate per year.

It was found also that a ton of this litter could absorb one and one-half tons of water and in addition to the water that soaked unto the needles themselves, a large amount is held for a time by the litter but eventually drains away.

From "Forest and Outdoor."

1928 SECONDARY SCHOOL EXAMINATIONS.—(Continued)

GRADE IX.

ENGLISH LITERATURE

1. In regard to each of the following, give the author, and the name of the piece from which it is taken, and explain its meaning in relation to the context:
   (*a*) "They also serve who only stand and wait."
   (*b*) "From scenes like these old Scotia's grandeur springs."
   (*c*) "The boast of heraldry, the pomp of power."
   (*d*) "Storied urn."
   (*e*) "Build thee more stately mansions, O my soul."—10

2. (*a*) Beginning with the words, "Charity never faileth," complete the extract.
   (*b*) Write four stanzas of "To a Water fowl," beginning "All day thy wings have fanned at that far height."—12

3. What is the theme of the poem Ulysses? Give quotations supporting your answer. Contrast the character of Ulysses with that of his son Telemachus and indicate, with reasons, the character you prefer.—10

4. (*a*) What events led to Paul's address before Agrippa?
   (*b*) Against what charges was Paul defending himself? How did he meet each charge?
   (*c*) Did Paul succeed in accomplishing his purpose in making this speech? Give reasons for your answers.—12

5. (*a*) When and on what occasion did Lloyd George deliver his speech on the Great War?
   (*b*) Show how, by reference to his native valley in Wales, he illustrated the main theme of his address.—10

6. Write a short note on each of the following persons to show that you know who he is, and to indicate in what connection you have studied about him this year:
   Balshazzar, Perseus, Cardinal Wolsey, Warren Hastings, John Milton.—10

7. Enumerate the evils that Alfred, Lord Tennyson wished the bells to ring out and the good things he wishes them to ring into the world. Which one of these includes the whole list?—12

8. Outline briefly the life story of one of the following:
Dr. Manette, Madame Defarge or Sydney Carton.—12

9. Indicate the four stories embodied in "A Midsummer Night's Dream" and show how they are linked together (that is how one depends on the other, how the fairies are concerned with the lovers, etc.)

or

Write a few sentences about incidents illustrating:
(*a*) The courtesy of Theseus.
(*b*) The mischief of Puck.
(*c*) The conceit of Bottom.—12

GRADE IX.

ENGLISH GRAMMAR.

1. For thee, *who,* mindful of th'unhonor'd dead,
Dost in these lines their artless tale *relate,*
If chance, by lonely contemp ation *led,*
Some kindred spirit shall inquire thy fate,—

Haply some hoary-deaded swain *may say,*
"Oft have we seen him, at the peep of dawn,
Brushing with hasty steps the dews away
To meet the sun upon the upland lawn.

(*a*) Write in full all the clauses in the above extract and give the kind and relation of each.—20
(*b*) Parse the italicized words.—15
(*c*) Analyse each clause in detail.—15

2. *Driving* a motor requires skill. I saw him *driving* his motor down the hill. He received forty stripes *save one.* We speak *that* we do know. Parse the words italicized in the above sentences.—10

3. Give an example of each of the following:—Elliptical sentence, contracted sentence, adverbial clause relating to time, adverbial clause relating to manner, and adverbial clause relating to condition.—10

4. Form sentences in which the words, *on, off, behind, before,* and *down,* are used (1) as prepositions, (2) as adverbs.—10

5. Rewrite the following sentences, changing such tenses as need correction:—
If we went the road we knew, we should have been able to take the earlier train.

Although Sam had been brought up on a farm, he never did a task like this before.

I do not know whether he came yesterday or whether he just came this morning.

If a generation ago a girl tried to practice law, she would have been laughed at.

The captain praised his rescuers, who in the hour of danger showed great presence of mind.—10

6. Rewrite the following story, turning every masculine noun and pronoun into the feminine gender:—

Three peers of the realm who were out walking in the country, were offered a lift by a milkman. They accepted his offer, and on the way he asked who they were.

"I am the Prince of Wales," said one of them, "and this is my brother-in-law the Duke of Fife, and this is my nephew, the Earl of Devon. What is your name, may I ask?"

"Oh, I am the Emperor of China," answered the milkman merrily.—10

GRADES IX and X.

DRAWING.

1. Make a careful drawing of your teacher's desk turned at an angle, locating your horizon line and the two vanished points.

2. Within an enclosure about five inches by eight inches, paint from memory in water colours any one of the following:—
   (*a*) Sprays of goldenrod.
   (*b*) Bulrushes (with foliage).
   (*c*) A dandelion in bud, flower, and foliage.
   (*d*) A small branch of crabapples and leaves.

Landscape Sketching.

3. Make a pencil sketch of:—
   (*a*) A dark tree against a light sky.

or

   (*b*) A snow-covered hillside with dark pine trees in the distance.

GRADE X.

GENERAL ARITHMETIC

(All questions are of equal value.)

1. The assessed value of a school district is $2,450,000.00; the amount to be raised by taxes is $15,925.00. Find the tax on a property assessed at $5,600.00.

2. A house that costs $15,500.00 rents for $155.00 per month. It is insured for $10,850.00 at $\frac{4}{5}\%$ yearly, the taxes are 15 mills on an assessment of $12,450.00, and $346.45 is spent each year on repairs. What rate of interest does the investment pay?

3. A certain implement retails for $105.00, the retail dealer making a profit of 33 $\frac{1}{3}\%$, the wholesale dealer made a profit of 16 $\frac{2}{3}\%$ and the manufacturer a profit of 12½%. Find the cost to manufacture the article.

4. What must be the face of a note payable in 60 days that, when discounted at the bank at 6%, will yield $600.00?

5. The difference between the incomes derived from investing a certain sum in 4 per cent stock at 112½ and in 2½ per cent stock at 75 is $84.00. Find the sum invested.

6. The longitude of Montreal is 73° 35′ west. The difference in time. between Montreal and Edmonton is 2 hours, 39 minutes, 40 seconds Find the longitude of Edmonton.

7. The area of a square plot is 390,625 sq. ft. What is the length of the diagonal?

8. Find the cost of painting a globe 56 inches in diameter at 8cts. per sq. ft.

GRADE X.

GENERAL SCIENCE.

1. Describe carefully, with drawings, the different phases of the moon.—12

2. What are molecules and atoms? Describe an experiment to show that water is a compound.—12

3. Draw a diagram to show the wind belts of the earth. Mark on ot the different winds and belts of calm. Account for the direction of these winds.—15

4. (*a*) Draw a diagram to show how a water turbine is used to generate electricity.
   (*b*) Explain two methods of softening hard water for domestic use.—12

5. Explain the three ways in which heat may be transferred from one body to another.—10

6. What is an acid? A base? A salt? Neutralization?—12

7. (*a*) Name and define the two common units of measure for heat.
   (*b*) What is humidity? What is the relation of humidity to comfort? What effect has evaporation of a liquid on temperature? Why?—15

8. (*a*) Describe the ordinary chemical fire extinguisher and show how it works.
   (*b*) Explain how a thermostat works.—12

GRADE X.

PHYSICS.

(Answer only nine questions.)

1. Explain the construction and show the uses of the ordinary barometer.

2. (*a*) Define the two common units used in measuring heat.
   (*b*) What is meant by specific heat?
   (*c*) What is meant by thermal capacity of a body?—12

3. The volume of a certain mass of gas is 500cc. at a temperature of 27°C. and a pressure of 400 grams per sq. cm. What is its volume at a temperature of 17°C. and a pressure of 600 grams per sq. c,. ?—11

4. Make a drawing of Bramah's hydraulic press. State the principle on which it depends for its effectivemess.—11

5. (*a*) Explain the principle on which the siphon works.
   (*b*) What is the principle of Archimedes?—11

6. (*a*) What is meant by The Cœfficient of Linear Expansion?
   (*b*) What is peculiar about the expansion of water and its maximum density?—11

7. (*a*) How are the fixed points on a thermometer determined?
   (*b*) Convert 32°C. to Fahrenheit scale and 8°F. to Centigrade.—11

8. Define the following terms:—
Osmosis, viscosity, solids, liquids, gases, cohesion, adhesion, density.—11

9. A scow 60 ft, long, 22 ft. wide, and 5 ft. out of water when empty is loaded with coal until the top of the boat is within 6 in. of the surface. How many tons of 2240 lb. each are there in the load?—11

10. Make a drawing of a suction or lift pump and show how it works.—11

GRADE X.

GEOMETRY.

1. Define the following, using one sentence for each definition: *line, plane, rhombus, locus of a point, axis of symmetry.*—10

2. Complete the following sentences:
   (*a*) A line which is..... to one of two parallel lines is..... to the other also.
   (*b*) The adjacent angles of a parallelogram are.....
   (*c*) All the interior angles of any rectilineal figure are equal to.....
   (*d*) If one side of a triangle is greater than another, then.....
   (*e*) Two angles whose sum is one right angle are said to be.....10

3. Draw a plan of a rectangular field 380 yds. by 270 yds. By measurement estimate the distance between the opposite corners. (State the scale you use.)—10

4. Two ships sail from a port, one due N. at 15 miles an hour, the other E.N.E. At the end of half an hour they are in line with a lighthouse which is 11 miles due E. of the port. At what rate does the second ship sail? (Solve by using plan to scale. State scale used.)—10

5. Give brief answers without proof to the following:
   (*a*) How many degrees are there in the adjacent angles which one straight line makes with another straight line upon one side of it?
   (*b*) What is the shortest line that can be drawn from a given point to a given straight line?
   (*c*) How many degrees are there in the interior angles of a triangle?
   (*d*) If the sides ofa triangle are produced in order, what will be the sum of the exterior angles so found?
   (*e*) The locus of points two inches from a fixed point A is..... (Complete the sentence giving an accurate description of this locus).—15

6. Enunciate three theorems in which, from data given, triangles are proved to be equal in all respects.—10

7. Prove one of the theorems indicated in question No. 6.—10

8. Given a triangle ABC. Inside the triangle find a point P which is equidistant from AB and BC and also equidistant from BC and CA. From P draw perpendiculars to the three sides. With P as center and one of the perpenduaulars as radius, draw a circle. State your authority for each step. 10

9. EFGH are the middle points of the sides AB, BC, CD, DA of the quadrilateral ABCD. Prove that EFGH is a parallelogram.—15

GRADE X.

HISTORY.

1. (*a*) Connect an important event with each of the following dates: 490 B.C., 338 B.C., 275 B.C., 313 A.D., 800 A.D.
   (*b*) Assign dates to each of-the following events:
   Fall of Athens, Destruction of Carthage, Fall of Jerusalem, Beginning of decline of Roman Empire, First Crusade.—10

2. (*a*) Connect an historical fact with each of the following men: Solon, Xerxes, Demosthenes, Hannibal, Simon de Montfort;
   (*b*) Mention a man noted for his connection with each of the following: Greek Philosophy, The making of Athens a naval power. The Hellenization of Asia, The founding of the Roman Empire, The persecution of the Christians.—10

3. (*a*) For what is each of the following places noted:—
   Olympus, Thermopylae, Grannicus, Zama, Aachen?
   (*b*) Explain what is meant by Peloponnesus, The Thirty Tyrants, Punic Faith, Nicene Creed, Scholasticism.—10

4. Explain what is meant by each of the following:—
   Democracy, Colonization, Græco-Roman, Centralization, Middle Ages.—15

5. Point out the significance of each of the following in the world's history: (1) Battle of Platea, (2) The fall of Rome, (3) Magna Charta.—15

6. Charlemagne's reign has been described as "A patch of light in the vast gloom". Explain why it has been thus described.—10

7. Enumerate the main contributions that have been made to our civilization by each of the following: (1) The Greeks, (2) The Romans, (3) The Teutons.—15

8. If, from the period of history you have studied this year, you were to select five notable men to become citizens of Canada, what five would you select? Give a reason for each selection you make.—15

GRADE X.

ENGLISH.

1. (*a*) Write out in full the last two verses of the poem entitled "To a Skylark."
   (*b*) Write out 12 lines from the "Merchant of Venice" beginning "How sweet the moonlight sleeps on yonder bank."—10

2. Give the substance of any two of the following poems so as to make clear the thought in each case to one who has not read the poem: Arethusa; When the Lamp is Shattered; Ulysses.—10

3. Locate these quotations and explain the references:
   (*a*) "Within a window's niche of that high hall
   Sate Brunswick's fated chieftain; he did hear
   That sound the first amid the festival,
   And caught its tones with Death's prophetic ear."
   (*b*) "Our little systems have their day,
   They have their day and cease to be."
   (*c*) "All arm'd I ride, whate'er betide
   Until I find the Holy Grail."
   (*d*) We were the first that ever burst
   Into that silent sea."
   (*e*) "I am the daughter of earth and water
   And the nursling of the sky."—15

4. What different plots, or stories, are interwoven in "The Merchant of Venice"? At what point in the play do these stories become one? Indicate the climax in each of these plots.—12

5. Compare Antonio and Shylock pointing put (1) respects in which they are alike, (2) in which they differ, (3) their respcetive importance as characters in the play, and (4) any bearing your comparison may have on the proper relationship to wealth.—16

6. Tell how each of the following quotations is introduced into the play, and give its meaning in your own words:
   (*a*) "There is a sort of men whose visages
   Do cream and mantle like a standing pond,
   And do a wilful stillness entertain,
   With purpose to be dressed in an opinion
   Of wisdom, gravity, profound conceit."
   (*b*) "O, that estates, degrees and offices
   Were not derived corruptly, and that clear honour
   Were purchased by the merit of the wearer."
   (*c*) "The world is still deceived with ornament."
   (*d*) "The quality of mercy is not strain'd."
   (*e*) "How many things by season seasoned are
   To their right praise and true perfection."—15

7. Show how the loss of Silas Marner's money brought about a change of his relations toward the people of Raveloe.—10

8. In regard to each of the selections mentioned below give the name of the author, and in a short paragraph indicate the nature and purpose of the selection:

   The Cross of Sacrifice;
   Speech of an Address to the Throne;
   Letter from the Earl of Chesterfield to his Son;
   The Essence of a Man.

   or

   Give a personal description and character sketch of Sir Roger de Coverley'—12

GRADE X.

BOTANY.

1. Explain the processes that go on in the plant during photosynthesis, transpiration and respiration.—20

2. Describe the different parts of a typical flower and show the uses of the different parts.—20

3. Make a drawing of a diagrammatic cross section of a young dicotyledonous stem. Show the stem increases in size.—12

4. What are unisexual, bisexual, monœcious and diœcious flowers? What are the advantages of reproduction by seeds?—10

5. What is meant by self-pollination and by cross-pollination? What are the two principal agents employed in the latter case? Explain the terms dichogamy and dimorphism.—10

6. What are the two principal groups of woods? What are the differences between them as to stem and leaves?—8

7. Name four advantages that wood has over other structural materials.—10

8. What are tubers, stolons, runners? Give an example of each.— What is grafting, building, layering?—10

GRADE X.

CHEMISTRY.

1. Show how oxygen is made in the laboratory? What are its chemical and physical properties?—12

2. How is hydrogen prepared from water by the action of a metal? What are its chemical and physical properties?—11

3. What is meant by absolute temperature? State the laws of Boyle and Gay-Lussac with regard to pressure and temperature on gases.—11

4. What is meant by the gram-molecular volume? State the hypothesis on which it depends.—11

5. Compare the members of the chlorine family as to atomic weight, valence, state, colour and activity.—11

6. A certain weight of gas measured 55cc. at a tempearture of 100° when subjected to a pressure of 760mm. Calculate the volume which this gas will occupy at a temperature of 50° and a pressure of 740mm.—11

7. What are acids, bases, salts? Define the terms liquid, solute, water of crystallization, metathesis.—11

8. How may chlorine be prepared in the laboratory? What are its physical properties?—11

9. State and explain the laws of definite and multiple proportions. What is meant by a chemical equation?—11

GRADE X.

ENGLISH COMPOSITION.

1. Here is the middle of a story. Think of a beginning and an end. (*a*) Write a plan. (*b*) Write the story.

   Terrified by the sudden appearance of the white-clad figure from behind the hedge, the horse took the bit between its teeth and bolted. There was a cry of horror from the children in the gig.—30

2. Build the following into one sentence, making such slight changes as may be necessary:—

   I came out of the wood. I saw nearly a dozen cows. I saw, perhaps as many more black figures. I conjectured these black figures to be children. The mist had almost unrecoginzably exaggerated their forms.—10

3. By re-arrangement or reconstruction of the parts, or by subdivision, make the following sentences clearer and more forcible:—

   While waiting for her return I had time to look round the hall, in which there was nothing particularly uncommon except a large, vividly colouted picture of a gentleman in kilts, kissing the hand of a lady in apple-green satin, whom I learned from the insrciption to be Prince Charlie and Flora Macdonald.—10

4. Briefly define the following:—Prolixity, verbosity, tautology, redundancy, ambiguity, loose sentence, periodic sentence, and unity in a sentence. 15

5. Rewrite the following letter or valentine which Sam Weller sends to his sweetheart, correcting mistakes in punctuation, grammar, spelling, and arrangement:—

   "Lovely creetur i feel myself ashamed and compleetly circumscribed in a dressin of you for you are a nice gal and nothin but it. Afore i see you I thought all women was alike but now I find what a regular soft headed inkredlous turnip I must ha been for there aint nobody like you though I like you better than nothin at all. so i take the privilege of the day Mary my dear to tell you that the first and only time I see you your likeness was took on my hart in much quicker time and brighter colours than ever a likeenss was took by a profeel macheen wich praps you may have heers on Mary my dear, although it does finich a portrait and put the frame and glass on complete with a hook at the end to hang it up by, and all in two minutes and a quarter. Except of me Mary my dear as your walentine and think over wot Ive said My dear Mary I will now conclude your love-sick

   Pickwick. 20

6. Make a plan of any story suggested to you by the following:—

Prisoners confined in chamber 20 feet square—one small grating for ventilation—Nawab forgot about them—twenty-three alive next morning.—15

GRADE X.

ALGEBRA.

1. Define the following, using one sentence for each definition:—*Lowest common multiple, highest common factor, root of an expression, power of a quantity, literal cœficient.*—10

2. (*a*) What must be added to a—(1—b)—(1—c) to produce unity?
   (*b*) Divide $x^2—y^2—2y—1$ by $x+y+1$.
   (*c*) Simplify $a—(b—c)—[a—b—c—2\{b+c\}]$.
   (*d*) Multiply $x^2+2px^2—4p^2$ by $2x^2—7px—p^2$.—12

3. Write the factors of:
   (*a*) $4x^2—4x+1$.
   (*b*) $3x^3+5x^2+3x+5$.
   (*c*) $(c+d)^3—1$.
   (*d*) $12x^2—11x—5$.
   (*e*) $x^4—y^4—11x^2y^2$.—15

4. Simplify:
   (*a*) $\dfrac{x^2—1}{x^2—3x+2} \div \dfrac{x—1}{x—2}$.
   (*b*) $\dfrac{3—x}{1—3x} — \dfrac{3+x}{1+3x} — \dfrac{1—16x}{9x^2—1}$. 15

5. Find the values of the unknown quantities when

$$3x — \frac{y—3}{5} = 6.$$

$$\text{and } 4y + \frac{x—2}{3} = 12.$$

16

6. The number of seats in a certain class room (A) is three quarters the number in another room (B). If four seats were removed from A into B, B would have twice as many seats as A. Find the number of seats in each room.—16

7. Two trains leave Quebec for Port Arthur, one travelling 40 miles per hour and the other 45 miles per hour. One train makes the trip in three hours less than the other. What is the distance between the cities?—16

GRADE X.

LATIN.

1. Translate into English:

Interim legatis tribunisque militum convocatis, et quæ ex Voluseno cognosset *et quæ fieri vellet,* ostendit monuitque, ut *rei militaris ratio,* maxime ut maritimæ res postularent, ut quæ celerem atque instabilem motum haberent, ad nutum et ad tempus omnes res ab iis *administrarentur. His dimissis* et ventum et æstum uno tempore nactus secundum, *dato signo* et sublatis ancoris circiter *milia passuum* septem ab eo *progressus,* aperto ac plano litore naves constituit.

(*a*) Explain the construction of the words in italics.

(*b*) Decline quæ, res, litore in Singular and Plural.—25

2. Translate into English:

Cum paulo *longius* a castris processisset, suos ab hostibus *premi* atque ægre sustinere et *conferta legione* ex omnibus partibus tela *conjici* animadvertit. Nam quod omni ex reliquis paribus *demosso frumento* pars una erat reliqua, *suspicati* hostes, huc *nostros esse venturos,* noctu in silvis delituerant; tum dispersos depositis armis *in metendo occupatos* subito *adorti,* paucis interfectis reliquos incertis ordinibus perturbaverant, simul equitatu atque essedis circumdederant.

Account for the use and construction of the words in italics.—15

3. Translate into English:

Cassivelaunus, *ut supra demonstravimus,* omni deposita spe contentionis, *dimissis amplioribus copiis,* millibus circiter, quatuor essedariorum relictis, itinera nostra servabat, paululumque ex via excedebat, locisque impeditis atque silvestribus sese occultabat, atque iis regionibus, quibus nos iter facturos cognoverat, pecora atque homines ex agris in silvas compellebat; et, quum equitatus noster liberius *prædandi vastandique* causa se in agros effunderet omnibus viis notis semitisque essedarios ex silvis emittebat, et magno cum periculo nostrorum equitum cum iis confligebat, atque hoc metu latius vagari prohibebat.

(*a*) Account for the constructions in italics.

(*b*) Parse omni, spe, sese, pecora, metu.—25

4. Translate into English:

(Oppidum autem Britanni vocant quum silvas impeditas vallo atque fossa *munierunt,* quo incursionis hostium *vitandæ* causa convenire consuerunt.) Eo proficiscitur cum legionibus: locum reperit egregie natura

atque *opere* munitum, tamen hunc *duabus* ex partibus *oppugnare* contendit. Hostes, paulisper *morati*, militum nostrorum impetum non *tulerunt*, seseque alia ex parte oppidi ejecerunt. Magnus ibi numerus pecoris *repertus*, multique in fuga sunt comprehensi atque interfecti.

(*a*) In reference to the italicized words: Parse vitandæ, opere, duabus, morati, repertus.

(*b*) Give the 3rd Person Singular Future and Subjunctive Active and Passive of munire, oppugnare, tulerunt.—25

5. Distinguish between the use of the Gerund and the Gerundive, and give three examples of the different uses of each.—30

6. (*a*) Give with examples the different ways of expressing purpose in Latin.
(*b*) Distinguish between *Oratio Recta* and *Oratio Obliqua*, and give general rule with examples as to the introduction of clauses when the latter construction is used.—30

7. Translate into Latin any 10 of the following sentences:

These gifts which you sent to me are very acceptable to me.
He sent twenty ships for the purpose of transporting two legions.
Would that my friend may not be killed.
The barbarians fled into the woods so that our men might not pursue them.
Is anything sadder than death?
The place was more suitable for a camp than for a city.
Setting out at daybreak, he reached camp before midday.
Having been elected consul, he enrolled soldiers.
They sent envoys to seek peace.
Cæsar provided for the construction of a bridge.
The soldiers must fight bravely.
I don't know when this work will be done.
So great the number of the enemy that all were afraid.
When the enemy were not able to reach the river, they returned home.
He said that he had borne injuries a long time.
I shall remember this day to my life's end.
He was of such a character that no one believed him.
Who doubts that this is true?
If he had done this he would now be alive?
He said he had seen the man who went away.

LE FRANÇAIS. GRADE X.

Répondez à *huit* questions seulement. *Douze* marques pour chaque question et *quatre* marques pour un papier propre et bien écrit. *Onze* est obligatoire.

1. Ecrivez au pluriel (autant de mots que possible):—(1) La taverne bourdonnait comme un tambour. (2) Un vieux caractère allemand. (3) Un gros bateau à voile.
   Ecrivez au féminin:—(1) Son fils mineur est mort hier. (2) C'est un garçon discret et fier. (3) Mon oncle est un vieux pêcheur.

2. (*a*) Remplacez les noms par des pronoms personnels:—(1) *La mansarde* était occupée par le *cocher*. (2) *M. Furbach* se retira des *affaires*. (3) Envoyez *les livres à l'école*.
   (*b*) Ecrivez en toutes lettres:—(1) Le 18 juin, 1928. (2) Il y a 200 soldats dans cette caserne. (3) L'image est à la page 300. (4) Il a 80 ans. (5) Nous viendrons dans ½ heure.

3. Remplacez chaque tiret par un adjectif ou un pronom convenable:—(1) De —— deux plumes j'aime mieux —— que ——. (2) —— est mon oncle — —vous voyez. (3) Est —— vrai que vous êtes l'homme —— est malade? (4) —— dame —— vous parlez est —— sue —— je compte. (5) —— ne l'arrête.

4. Ecrivez les verbes avec "Ils" au *Parfait* et au *Futur*:—(1) Vous *avez* besoin de changer, et vous n'*êtes* pas riche. (2) Vous me *suivez* dans la cuisine, vous *buvez* un bon coup, vous *mangez* un morceau de pain et vous *allez* vous coucher.

5. Faites entrer le contraire de ces mots en de bonnes phrases:—sortir, neuf, refuser, le départ, faible, difficile.

6. Remplacez le discours direct par le discours indirect:—(1) Il hurla, "Tout est à moi." (2) Il s'écria, "Prenez garde, vous allez vous faire écraser les mains." (3) Naiklausse pensait, "Il ne sait pas la place, le trésor n'est pas ici, j'en suis sûr."

7. Donnez l'explication des mots et locutions suivants:—la mansarde, régler un compte, verdoyant, chez vous, allonger le pas, enfumés, un coquin, une côte, un livret, un donjon, un sentier, Que vous importe?

8. Répondez à ces questions:—(1) De quelles choses consistait le trésor du vieux seigneur? (2) Pourquoi Nicklausse est-il revenu à Vieux-Brisach après qu'il avait obtenu le trésor? (3) Comment Pérrichon se montre-t-il d'être un lâche? (4) Décrivez Madame Perrichon.

9. Ecrivez à peu près 20 lignes sur un de ces sujets:—
   (1) Décrivez Vieux-Brisach et ses environs.
   (2) Le retour de Nicklausse au Schlossgarten après qu'il est devenu riche.
   (3) L'incident de M. Perrichon et le Commandant.
   (4) Racontez comment vous avez passé vos vacances de l'année passée.

10. Ecrivez en bon français:—(1) He had just been struck with apoplexy. (2) Since it is yours, keep it. (3) I have waited for an hour. (4) I stopped and looked at the vast ruins.

11. La Dictée. Le Trésor du Vieux Seigneur. Page 32, chapitre 15, ligne 13, jusqu'à page 33, ligne 4. "Il poursuivit" à "d'un ton sec."

GRADE X.

GEOGRAPHY.

1. (*a*) What gives the air its weight? What instrument do we use to measure the pressure of the air?
   (*b*) What winds or air currents are produced by the general circulation of the atmosphere?
   (*c*) Describe what are known as the *doldrums*.—10

2. Describe fully a *tornado*.—15

3. (*a*) What is climate? What physical conditions affect the climate of a region? What are the four main types of climate?
   (*b*) Describe the type of climate that the people of Central Canada have.—15

4. (*a*) Give four of the "Uses of the Ocean."
   (*b*) Describe the relief of the ocean floor of the North Atlantic.
   (*c*) What are the materials found on the ocean floor?
   (*d*) Desrcibe the salinity of the different oceans.—15

5. (*a*) Name three of the indications that led people to believe that there were currents in the ocean.
   (*b*) Explain fully how the Gulf Stream is formed.
   (*c*) Give two of the effects of Ocean Currents.
   (*d*) Why are tides of great importance?—15

6. (*a*) Name five of the most common elements that are to be found in rocks.
   (*b*) Name the four main groups of rocks.
   (*c*) What are the chief characteristics of aqueous rocks?—15

7. (*a*) What are the three agencies that are most effective in producing rock weathering?
   (*b*) Name the four most important eroding agencies.
   (*c*) Name four different districts where the work of these agencies may be seen.—15

REPORT OF

INSPECTOR W. H. BRADY

For the Year 1927-28

MONTREAL, July 1928.

Sir,

I have the honour to submit my annual report comprising: I. The statistical summary of my inspection district; II. General remarks on the wording of the Education Act in the same district; III. The classification of municipalities in the order of merit.

STATISTICAL SUMMARY.				1927-28	
1.—Number of school municipalities:					
a) Under control of commissioners				26	
b) Under control of trustees				27	
Total					53
2.—Number of schools:					
a) Elementary				90	
b) Intermediate				17	
Total					107
3.—Number of teachers:					
a) Lay male teachers				27	
c) Lay female teachers				267	
Total					294
4.—Average salaries in the schools under control:				$	
a) Lay male teachers:	in elementary schools			2491.66	
	in intermediate schools			1667.77	
c) Lay female teachers:	in elementary schools			990.12	
	in intermediate schools			847.46	
5.—Number of children of school age: (according to the secretary-treasurer's reports).					
a) Boys from 5 to 7 years.	1081	Girls from 5 to 7 years.	1071	2152	
b Boys from 7 to 14 years.	3798	Girls from 7 to 14 years.	3832	7630	
c Boys from 14 to 16 years.	1056	Girls from 14 to 16 years.	1047	2103	
d) Boys from 16 to 18 years.	873	Girls from 16 to 18 years.	853	1726	
Total					13,611
6.—Number of pypils inscribed:					
a) In elementary schools				5567	
b) In intermediate schools				1718	
Total					7,285
7.—Average attendance:				80%	
a) In elementary schools				82.3	
c) In intermediate attendance				81%	81%
e) Average general attendance					

STATISTICAL SUMMARY.—Continued	1927-28	
8.—Classification of pupils:		
In Kindergarten	71	
In Grade 1	1641	.....
In Grade 2	938	.....
In Grade 3	945	.....
In Grade 4	916	.....
In Grade 5	934	.....
In Grade 6	933	.....
In Grade 7	690	.....
In Grade 8	114	.....
In Grade 9	78	.....
In Grade 10	25	.....
Total	.....	7,285

GENERAL REMARKS.

I desire to preface my first report by thanking the Department of Education for the confidence placed in me by appointing me to this Inspectorate and by pledging my best efforts to the cause of education within its bounds.

My district of inspection includes the Protestant elementary and intermediate schools of the counties of Beauharnois, Chateauguay, Huntingdon, Joliette, Laprairie, L'Assomption, Laval, Montcalm, Napierville, Soulanges, Westmount; those of Chambly, except McMasterville; those of Jacques Cartier, except Lachine and Verdun; those of Vaudreuil, except Pointe Fortune; that of the town of Terrebonne, in Terrebonne county. In addition I visited, at your request, the schools in the counties of Drummond and Richelieu.

Schools.—In my own district there were in operation eighty-three elementary and fourteen intermediate schools; to these were added seven elementary and three intermediate schools in the two additional counties. The elementary schools may be separated into two classes, Urban and Semi-urban, and Rural. The former, nineteen in number, have staffs of from two to twenty-four teachers and follow the graded course of study; the latter, numbering seventy-one, are all one-teacher schools, using the Rural Elementary course.

Qualifications of Teachers.—Of the 294 teachers employed all held diplomas valid in this province except eight, who were teaching on permission from the Superintendent. Of these eight, only two did not have professional training; four had attended Macdonald College, one held an English Second Class Certificate, one an Ontario Third Class, one had passed Grade XI, and one Grade IX.

Salaries.—It will be noted that the average salaries both for men and women are higher in elementary than in intermediate schools. This is due to the considerably higher salaries paid in the Urban elementary schools, situated on the Island of Montreal and the South Shore. The average salary paid female teachers in the Rural elementary schools was $506.40. There were no male teachers in the latter schools.

School Year.—Of the 97 schools in my own district all but 14 were in session for the full school year of ten months. Ten held a nine months session, two were open for eight months, one for four months, while St. Cyprien de Napierville, with only one pupil, held a summer session of two months. In Drummond county the six elementary schools have a nine months term.

New and Repaired Buildings.—In Longueuil a modern four-roomed school has been erected to replace a school held in very congested quarters in a dwelling-house. Extensive additions have been made to King's School, Westmount, to Elizabeth Ballantyne School, Montreal West, and to the intermediate school of St. Laurent. In each case large, well equipped gymnasiums have been provided, as well as several class-rooms. The school at East Greenfield was extended to to make provision for another class-room and at Chambly Canton the former elementary school was remodelled into a two-room building in order that the school might rise to intermediate status. Minor repairs have been made to forty-school-buildings in the inspectorate.

Consolidation.—At Hudson and St. Felix de Kingsey are found Consolidated Schools of some years standing, the latter being the first established in the province. This year Dundee decided to consolidate its four rural schools. In this they are being joined by one district of St. Anicet and one of Godmanchester. The new building is now in process of erection. Beginning in September the pupils of the remaining five districts of Godmanchester are to be conveyed to Huntingdon High School.

The municipality of Pointe Claire and Beaconsfield conveys its pupils from outlying parts to its Intermediate School at Cedar Park. At Chambly Canton a union has been effected with the municipality of Richelieu and the pupils from the latter are conveyed to the newly-established Intermediate School of Chambly Canton. Pupils from the Hervey Institute also now attend this school.

Conferences.—The Teachers' Conferences, which were well attended, were held at Huntingdon, Ormstown, Hemmingford and Montreal. At all these I was fortunate in having the able assistance of Mr. Charles McBurney, B.A., of the Department of Education. At the Montreal Conference Miss L. E. Tanner also was present and gave some valuable hints on the teaching of French.

Quality of Teaching.—I find the great majority of the teachers doing faithful work and obtaining, on the whole, creditable results in the teaching of the various subjects. A stardardized test in Spelling, given throughout the inspectorate, revealed a considerably higher spelling ability than in the corresponding grades in the American schools. This was almost uniformly true in all types of schools. The poorest results are being obtained in Mental and Rapid Arithmetic, Writing, and, in the Rural schools, Oral French.

The Junior Red Cross is now found in most encouraging features, especially of our rural school programme. In many localities the Women's Institutes are acconplishing much good for the schools in various ways.

Bonuses and Prizes.—Bonuses to Teachers.—Bonuses are recommended to the following for successful teaching:

Miss Dora B. Upton, Miss Alma McCartney, Miss E. W. Ascah, Miss E. W. Stewart, Miss Lillian Brown, Miss Grace Fiskin, Miss May L. Savage, Miss Hazel E. Merlin, Miss Lillith Arnold, Miss Doris LeGros, Miss Edra I. Mc-lellan, Miss J. M. Carson, Miss H. J. McNeil, Miss Jean E. Cullen.

The following are debarred from the bonuses in succession:

Miss M. V. Marshall, Miss E. C. Cullen, Mrs. Estella Boyd, Miss L. A. Rutherford, Miss Emma Reid, Miss E. S. Boddy, Miss Ruth Dobbie.

Strathcona Trust.—The five prizes and certificates are recommended as follows:

St. Bruno, Miss M. V. Marshall; St. Malachie d'Ormstown, No. 6; Miss Eliz. C. Cullen; Hemmingford, No. 11, Miss Emma Reid; Hemmingford, No. 1, Miss Dora B. Upton; Havelock, No. 1, Miss E. W. Stewart.

Bonuses to Municipalities.—The following are recommended for bonuses for progress:

Longueuil, Pinehurst and East Greenfield, Hinchinbrooke, Chateauguay Basin, Pointe Claire and Beaconsfield.

Classification of Municipalities.—According to Art. 9 (*m*) of the Regulations:

Excellent.—Westmount, Outremont, St. Laurent, Pointe aux Trembles, Coteau St. Pierre, Chateauguay Basin, Pointe Claire and Beaconsfield, Sault au Recollet, Joliette, St. Bruno, St. Lambert, Hampstead, Chambly Canton, Hudson.

Good.—Drummondville, Pinehurst and East Greenfield, Howick, St. Louis de Gonzague, Delson, Greenfield Park, Sorel.

Fair.—Terrebonne, St. Felix de Kingsey, Mascouche, Godmanchester, Longueuil, St. Chrysostome, Rawdon, St. Malachie d'Ormstown, St. Teles-phore, Hemmingford, South Durham, St. Clement de Beauharnois, Durham Township, St. Hubert, Hinchinbroke, St. Anicet, Elgin, Dundee.

Poor.—Franklin, St. Felix de Valois, Ste. Justine de Newton, Kingsey Falls, Havelock, Laprairie, St. Urbain, St. Constant, Napierville.

Unranked.—(No. schools in operation):—Laval des Rapides, Dorion and Isle Cadieux, St. Pierre de Durham, Ste. Anne du Bout de l'Isle, Senneville.

I have the honour to be, etc.,

W. H. Brady,
Inspector of Schools.

REPORT OF

INSPECTOR Rev. GEORGE HARRINGTON

For the Year 1927-28

Mutton Bay, P. Q., July 30th, 1928.

The Honourable Superintendent

of Public Instruction,

Quebec, P. Q.

Sir,

I have the honour to submit the annual report of my Inspectorate for the year ending June 30th, 1928.

STATISTICAL SUMMARY.						1927-28
1.—Number of schools						8
2.—Number of teachers: male					5	
female					2	
Total						7
3.—Average salary: per month						$40.00
4.—Number of children of school age:—						
a) Boys from 5 to 7 years.	36	Girls from 5 to 7 years	35		71	
b) Boys from 7 to 14 years.	74	Girls from 7 to 14 years	62		136	
c) Boys from 14 to 16 years.	17	Girls from 14 to 16 years	18		35	
d) Boys from 16 to 18 years.	21	Girls from 16 to 18 years	10		31	
Total						273
5.—Number of pupils inscribed						200
6.—Average attendance						60%
7.—Classification of pupils:—						
In first year					96	
In second year					27	
In third year					26	
In fourth year					24	
In fifth year					27	
In sixth year					0	
Total						200

GENERAL REMARKS.

Again there were eight schools in operation during the past year, and, while there were seven teachers, one worked for half time only for five months, and another for one month as temporary help: so that it was impossible to keep each school open for the full term.

But with the help of the Labrador Voluntary Educational League we were able to operate for a longer period than usual, one school being open for ten months one for nine, two for seven, and the others between three and five. Much credit is due these teachers, two of whom worked under the greatest difficulty, having no real school building and very little equipment. This year we have six of such additional teachers, one working at a place where there has been no school for five years and one where the summer school last year was the first of any sort for many years.

I am glad to say that all the buildings are now in good condition and on behalf of the people I wish to thank the Department for the new building at Old Fort Island which is very satisfactory and is in use at the present time. Equipment is gradually being improved, libraries being formed and the authorized couse of study used. Physical Drill was taught at Harrington. It is noticeable that more parents are taking a real interest in the education of their children, while some are working earnestly to bring the schools into line with others in the rest of the Province.

Classification of schools by order of merit:

Excellent.—Harrington Harbour, St. Paul's River.

Good.—Mutton Bay, La Tabatiere, Old Fort, Kegashka.

Poor.—Aylmer Sound, The Barachoix.

I have the honour to be, etc.,

GEO. HARRINGTON,
School Inspector.

REPORT OF

INSPECTOR HOWARD A. HONEYMAN

For the Year 1927-28

OTTAWA, July 1928.

Sir,

I have the honour to submit my annual report comprising: I. The statistical summary of my inspection district; II. General remarks on the working of the Education Act in the same district; II. The classification of municipalities in order of merit.

STATISTICAL SUMMARY.				1927-28	
1.—Number of school municipalities:					
a) Under control of commissioners				32	.....
b) Under control of trustees				15	.....
Total				.....	47
2.—Number of schools:					
a) Elementary				100	.....
b) Intermediate				6	.....
c) Subsidized independent institutions				1	.....
Total				.....	107
3.—Number of teachers:					
a) Male teachers				5	.....
b) Female teachers				116	.....
Total				.....	121
4.—Average salaries in the schools under control:				$	
(*a* Male teachers:	in elementary schools			553.33	.....
	in intermediate schools			1000.00	.....
b) Female teachers:	in elementary schools			526.35	.....
	in intermediate schools			816.11	.....
5.—Number of children of school age: (according to the secretary-treasurer's reports).					
a) Boys from 5 to 7 years	248	Girls from 5 to 7 years	230	478	.....
b) Boys from 7 to 14 years	990	Girls from 7 to 14 years	989	1979	.....
c) Boys from 14 to 16 years	260	Girls from 14 to 16 years	272	532	.....
d) Boys from 16 to 18 years	158	Girls from 16 to 18 years	167	325	.....
Total				.....	3,314
6.—Number of pupils inscribed:					
a) In elementary schools				2027	.....
b) In intermediate schools				570	.....
c) In the subsidized independent institutions				13	.....
Total				.....	2,610
7.—Average attendance					
a) In elementary schools				69.6%	
b) In intermediate schools				80.6	.....
c) In the subsidized independent institutions				76.9	.....
d) Average general attendance				.....	.....

STATISTICAL SUMMARY.—Continued.	1927-28	
8.—Classification of pupils:		
In first year	698	.....
In second year	339	.....
In third year	318	.....
In fourth year	371	.....
In fifth year	253	.....
In sixth year	314	.....
In seventh year	223	.....
In eighth year	65	.....
In ninth year	29	.....
In tenth year	.....	.....
Total	.....	2,610

GENERAL REMARKS.

My district of inspection includes the Protestant elementary and intermediate schools in the counties of Hull and Pontiac, with six schools in the electoral district of Papineau. In addition I visited fourteen schools in the county of Richmond, included in the foregoing summary of statistics.

During the year there were in operation one hundred regular elementary schools, one independent elementary school, and six intermediate schools.

Attendance.—The enrolment at the time of my second visit was as follows:

Protestant Boys	1141
Roman Catholic Boys	172
Protestant Girls	1133
Roman Catholic Girls	157
Total	2603

The school in the township of Kensington has not been open during the year. The French Protestant school at Duclos was open for only two months last autumn. It is likely to be reopened as most of its supporters have moved away.

The average attendance is low as the statistical table shows. There is a general complaint from teachers that the attendance is very irregular. I am often asked if there is not a law to compel children to attend school.

Staff.—One hundred and seven schools were in operation during the year. Of the Intermediate schools, Hull had nine teachers, La Pêche had two before Christmas and three after; the others, Fort Coulonge, Campbell's Bay, Bristol and Kingsbury. had only two teachers each. The qualifications of these teachers were as follows:

High School Diplomas with B.A	2
Intermediate Diplomas	19
Elementary Diplomas	71
Certificates from Ottawa Normal	6
Without diplomas	23
Total	121

It will be noticed that there is still a serious shortage of qualified teachers. What is the reason for it? In the first place the district is not sending enough students to Macdonald College to make up for the loss that comes every year by teachers dropping out of the profession for one reason or another. This year only six girls from the district attended the School for Teachers. That number is altogether inadequate for the needs of the district. Why do not more girls qualify as teachers? The principal reason for it must be that it does not pay financially. In at least fourteen of the schools where unqualified teachers are in charge, the salary is $400 or less. The term is short and the monthly salary is small. As a rule these poorer municipalities are heavily taxed. I would like to see the salary not less than $500 even in the poorest municipalities. That would mean a largely increased government grant in some cases. That municipal valuation roll is one disturbing factor in allotting grants. What per cent of the real value does it represent?

Salaries.—The salaries remain about the same as they were last year. The majority of school boards pay $600 a year of ten months' duration. In some cases the salaries are much lower as the municipalities are not able to meet this fair figure for a teacher's salary.

Length of term.—As has already been stated the term is, in the majority of cases, ten months.

Rate of taxation.—The rate varies from 25 cents to $2.50 per hundred dollars as based upon the municipal valuation roll.

Bonuses for Teachers.—The following teachers are recommended for bonuses, for successful teaching during the year:—

Jean Olmsted, Hull Sud, No. 4; Eliz. A. Sptehens, Thorne, No. 4; Beulah Findlay, Clarendon, No. 7; Mary E. Barber, Clarendon, No. 2; Olive M. Hodge, Leslie, No. 1; Gertrude Robinson, Maniwaki; Albert E. Levesque, Clarendon, No. 3; Janet D. Hudson, Alleyn; Sarah P. Edey, Clarendon, No. 11; Reginald A. Scobie, Clarendon, No. 12B; Myrtle Eades, Hull Sud, No. 1; Alice C. Dresser, Cleveland, No. 2; Rebecca B. Vaincourt, Northfield & Wright, No. 2; Hazel Stitt, London; Hertha F. Cornu, Onslow Sud, No. 4; Esther M. Cross, Cleveland, No. 12; M. Hazel Brown, Cantley; Winnifred I. Gee, Clarendon, No. 5; Maude A. Smith, Bristol, No. 5.

Successful teachers deberred from two bonuses in succession:

Jean McIntyre, West Templeton, No. 2; Mary B. Storie, Bristol, No. 2; Edith E. Moore, Bristol, No. 10; M. Idena Burden, Eardley, No. 2; Jean McDougall, South Onslow, No. 3; Clara E. Strutt, Clarendon, No. 4; Lottie McDowell, Clarendon, No. 9; Velma M. Smith, Clarendon, No. 1; Eileen Moore, Aylwin, No. 3.

Physical culture.—An improvement in physical training is noticed in most schools. The teachers are taking the work seriously and the results are fairly satisfactory. The prize books which are given are certainly very attractive. The following are recommended for prizes for this year's work:

1. Albert E. Levesque, Clarendon, No. 3; 2. Jean McDougall, South Onslow, No. 3; 3. Florence M. Nussey, Bristol, No. 9; 4. Elizabeth A. Stephens, Thorne, No. 4; 5. Winnifred I. Gee, Clarendon, No. 5.

Progressive municipalities.—A large number of municipalities have made improvements upon buildings and equipment during the year. For special reasons the following municipalities, in order of merit, are recommended for prizes for progress this year: South Onslow, Eardley, Bristol, Thorne, Calumet Island.

Teachers' Conferences.—Conferences were again held at Hull, Shawville, Kazubazua and Ladysmith. The attendance was good. Nearly every teacher, who was able to do so, was present at one of these conferences. Mr. McBurney ably took part at Shawville and Hull.

Several of the schools were broken up during the year by illness on the part of the teacher. Miss Ida V. Williams who was teaching at East Templeton passed away in January after an illness of two or three months. Several other teachers left to get married, or for other reasons. In some quarters the teacher's engagement is looked upon too lightly. I can point to a school where the work has amounted to almost nothing in the year because a teacher left the school after teaching two or three months.

Although a few teachers do not regard their work seriously, the great majority of the teachers in this district are faithful to the great trust that has been committed to their charge. On the whole a good deal of progress has been made. The members of the school boards show increased interest in their schools from year to year. I am pleased to bear witness to the good work that is being done in our schools through the Junior Red Cross Societies.

CLASSIFICATION OF MUNICIPALITIES IN ORDER OF MERIT

Excellent.—Maniwaki, Cantley, Quyon, Hull, Eardley, Campbell's Bay, Clarandon, St. Etienne de Chelsea, South Onslow, London, Kingsbury, Bristol.

Good.—South Hull, Wakefield North, West Templeton, Centre Onslow, Masham, Mansfield and Wright, Valley Gatineau, Low South, La Pêche, North Templeton, Wakefield, Melbourne Village, Alleyn.

Middling.—Lower Litchfield, Bryson, Portage du Fort, Cawood, Cleveland, Melbourne and Brompton Gore, Aylwin, North Onslow, East Templeton, Thorne, Mansfield South, St. Elizabeth de Franktown, Waltham.

Poor.—Upper Litchfield, Calumet Island, Leslie, Aldfield East, Centre Northfield, St. Cécile de Masham, Kensington.

Reference to Art. 9 (*m*) of the Regulations of the Protestant Committee will explain the basis on which this classification is made. Il will be noticed that length of term and the salary paid are two important factors. This is where the weaker municipalities lose.

The autumn reports and the spring bulletins have been made out and forwarded to the Department at various times during the year. Also about 900 lbs of books for school libraries were received from the Department and nearly all of them have now been placed in the schools. An excellent selection was made, especially of those books dealing with Canadian History. Teachers and pupils are delighted with them.

I have the honour to be, etc.,

H. A. Honeyman,
School Inspector.

REPORT OF

INSPECTOR J. H. HUNTER

For the Year 1927-28

THE HONOURABLE SUPERINTENDENT

of Education,

Quebec, Can.

Sir,

I have the honour to submit my annual report comprising: I. The statistical summary of my inspection district; II. General remarks in the working of the Education Act in the same district; III. The classification of municipalities in the order of merit.

STATISTICAL SUMMARY					1927-28	
1.—Number of school municipalities:						
a) Under control of commissioners					18	.....
b) Under control of trustees					6	.....
				Total	.....	24
2.—Number of schools:—						
a) Elementary					58	.....
b) Intermediate					8	.....
				Total	.....	66
3.—Number of teachers:						
a) Male teachers					3	.....
b) Female teachers					86	.....
				Total	.....	89
4.—Average salaries					$	
a) Male teachers in elementary schools					585.00	.....
b) Male teachers in intermediate schools					900.00	.....
c) Female teachers in elementary schools					494.66	.....
d) Female teachers in elementary schools					701.68	.....
5.—Number of children of school age: (*Census*) (according to secretary-treasurers' reports).						
a) Boys from 5 to 6 years	130	Girls from 5 to 6 years	132		262	.....
b) Boys from 7 to 13 years	574	Girls from 7 to 13 years	640		1214	.....
c) Boys from 14 to 15 years	171	Girls from 14 to 15 years	138		309	.....
d) Boys from 16 yrs and over	112	Girls fro 16 yrs and over	87		199	.....
				Total	.....	1,984
6.—Number of pupils enrolled:						
a) In the elementary schools					1062	.....
b) In the intermediate schools					340	.....
				Total	.....	1,402
7.—Average attendance: (*in percentage*).						
a) In the elementary					78.00	.....
b) In the intermediate schools					79.35	.....

STATISTICAL SUMMARY.—Continued	1927-28	
8.—Classification of pupils:		
In Grade 1	357	.....
In Grade 2	170	.....
In Grade 3	172	.....
In Grade 4	149	.....
In Grade 5	166	.....
In Grade 6	149	.....
In Grade 7	122	.....
In Grade 8	63	.....
In Grade 9	22	.....
In Grade 10	21	.....
Total	.....	1,402

GENERAL REMARKS.

Inspectorate.—The district of my inspection includes all of the County of Stanstead, half of the large County of Compton and one parish in the County of Sherbrooke.

In addition, I visited, at your request 2 Schools in the County of Richmond and 7 Schools in the County of Sherbrooke, and 3 Schools in the County of Compton, included in the foregoing summary of statistics.

Certificated Teachers.—There has been a steady gain towards this end. This year there were but 6 teachers without diplomas. 91% held diplomas. It is hoped that the staff for 1928-29 will be 100% certificated.

School-Term.—The School-term is yet too short in most municipalities. Hatley, amongst rural municipalities, still leads with 10 months. Of late a number of School Boards have lengthened the term to 9 months.

Consolidatiom.—Another consolidated school was opened at the beginning of the year—Fitch Bay.

The building is a fine brick structure of 2 stories, with 4 class-rooms, teachers' room, airy basement, flush closets, spring water and bubblers in both corridors.

An ample campus provides for school sports)—4 Vans bring the pupils regularly to school. The school had an attendance of over 100 the first day. The opening exercises were made memorable by the presence of representatives of the Protestant Committee, of the Federal Parliament and of many local citizens. Consolidation gives the privilege to rural youth, of proceeding to advanced grades, whilst living at home. It therefore aids towards a higher intellectual status in a rural district. It further aids towards more regular attendance at school and also ensures a full 10 mos. term. It also aids towards a community spirit amongst pupils because of wider association than is ever possible in the small rural school. Consolidation because of wider school constituency, helps to broaden the sympathies of ratepayers and leads to healthful concerted educational effort.

Salaries.—Salaries, in most municipalities, remain at $55. a month. Hereford with 2 schools at the extreme South-east of the County of Compton and near the international boundary, gives $60.

Improvements.—A number of municipalities have made considerable repairs on buildings. 90% of the School-buiidings are now in very respectable condition.

Libraries.—Through the generosity of the Department, every school, this year, has received a goodly number of useful and interesting books. Moreover, every year the libraries of 5 schools are sure to profit through excellence in Physical Exercises.

Organs.—It is pleasing to note the increasing number of organs as valuable assets of school life.

Conferences.—Conferences, as heretofore, were held in Bury. Sawyerville, Sherbrooke & Tomifobia. The attendance was 100%. Mr. C. McBurney, B.A., of the Department attended each Conference and dealt with several school subjects in a clear-cut and helpful way.

Womens Institutes.—It is fitting indeed to recognize here the intelligent sympathy and constancy of the Institutes towards the schools in their vicinities, in the providing of apparatus, appliances for sports and incidentals at the noon-hour.

School Boards.—It is fitting to state that the Boards, as a rule, are showing definite and continued interest in their schools. Worthy recognition must also be made of the fidelity and interest of the Sec.-Treasurers.

Bonuses for successful teaching.—Miss Jessie Hillman, Vivian Little, Pearle Smith, Mabel Jackson, Donna Geddes, Marjorie McGilton, Mildred Searles, Margaret Thompson, Gloria Curtis, Mrs. Pearle Anderson, Miss Margaret Ross, Helen Ayer, Edna Oliver, Helen Davis, Mabel Nourse.

Successful teachers debarred from two bonuses in succession.—Miss Myrtle Gray, Mrs. Caroline Wilson, Miss Julia Bacon.

Strathcona Trust.—The 5 bonuses are recommended as follows: Barnston, No. 10; Miss Myrtle Gray; Stanstead No. 28, Miss Julia Bacon; Eaton, No. 5, Miss Laura MacKinnon; Eaton, No. 18, Miss Isobel Ford; Newport, No. 4, Miss Grace Cumming.

Bonuses to municipalities.—The following are recommended for bonuses: Stanstead, Compton, Magog, Newport, Hereford.

CLASSIFICATION OF MUNICIPALITIES

Excellent.—Hatley, Hereford.

Good.—Barnston, Bury, Compton, Compton Village, East Angus (Annex), E. Clifton, Eaton, Hatley, Magog, Newport, Stanstead, Ste. Catherine de Hatley.

Fair.—Remaining municipalities.

I have the honour to be, etc.,

J. H. HUNTER,
Inspector of Schools.

REPORT OF

INSPECTOR Rev. LEWIS J. KING

For the Year 1927-28

NEW RICHMOND, July 1928.

The Superintendent of Education,

Quebec, P. Q.

Sir,

I have the honour to submit the statistics and general report of my district of inspection for the year ending 30th June, 1925.

SUMMARY OF STATISTICS				1927-28	
1.—Number of school municipalities:					
a) Under control of commissioners				26	.....
b) Under control of trustees				14	.....
Total				.....	40
2.—Number of schools:					
a) Elementary				63	.....
b) Intermediate				6	.....
Total				.....	69
3.—Number of teachers:					.....
a) Male teachers				5	.....
b) Female teachers				98	.....
Total				.....	103
4.—Average salaries:				$	
a) Male teachers	in elementary schools			505	.....
	in intermediate schools			957	.....
b) Female teachers	in elementary schools			682	.....
	in intermediate schools			715	.....
5.—Number of children of school age:					
a) Boys from 5 to 7 years	278	Girls from 5 to 7 years	300	578	.....
b) Boys from 7 to 14 years	1279	Girls from 7 to 14 years	1096	2315	.....
c) Boys from 14 to 16 years	319	Girls from 14 to 16 years	311	630	.....
d) Boys from 16 to 18 years	294	Girls from 16 to 18 years	247	541	.....
Total				.....	4064
6.—Number of pupils enrolled:					
a) In the elementary schools				2161	.....
b) In the intermediate schools				348	.....
Total				.....	2509
7.—Average attendance					
a) In the elementary schools				74%	.....
b) In the intermediate schools				77%	.....
c) Average general attendance				.....	75%

STATISTICAL SUMMARY.—Continued	1927-28	
8.—Classification of pupils:		
In Grade 1	.....	571
In Grade 2	.....	370
In Grade 3	.....	293
In Grade 4	.....	350
In Grade 5	.....	297
In Grade 6	.....	293
In Grade 7	.....	207
In Grade 8	.....	61
In Grade 9	.....	61
In Grade 10	.....	6
Total	.....	2,509

GENERAL REMARKS

The inspectorate is composed of the Protestant schools of the Gaspe Peninsula with the exception of New Carlisle but with the addition this year of the elementary schools in the County of Sherbrooke.

Teachers.—Of 103 teachers engaged, 14 had no diplomas. Each of these has signified her intention of going to Macdonald or back to school for a higher grade.

Salaries.—The average salary for female teachers with elementary diplomas in the Peninsula was $547. It should surprise some boards to realize that they are paying less than the average. New Richmond engages nine elementary teachers and pays eight of them $500 each. In the whole Peninsula only two qualified teachers get less, viz. those in Barachois and Port Daniel West. Roseville pays $650 but for two years this municipality has kept a teacher known to be efficient and for next year; without advertising they have engaged one who has proved herself successful. Roseville will profit largely from this policy.

Rural Elementary Schools.—Entrance to Grade VIII is getting harder than it was a few years ago so that the discredit for failures is now more often placed where it belongs viz. on the Elementary rather than on the Intermediate schools. Conditions can be improved by consolidation of schools that are not too far apart and by selecting and keeping, for a number of years, only teachers who have proved their ability.

Intermediate Schools.—The inspector again kept closely in touch with Grades VIII and IX by means of monthly uniform tests. The work seemed about as usual, but Shigawake showed marked improvement. Metis Beach and Sunnybank each made an effort to qualify as Intermediate schools. The building in Metis is not adequate and two teachers are not able satisfactorily to carry on the work of the large school in Sunnybank.

Unless St. Laurent de Matapedia provides a better building this municipality should not long be permitted to operate an Intermediate school.

The building and equipment in Gaspé are excellent and are being improved each year. This school is a credit to the town and county. Pupils from many miles around come here for Grades VIII and IX and many teachers of the Peninsula and the Province are its graduates. Gaspé school however is suffering from growing pains and two teachers can no longer satisfactorily do the work.

Conference.—The conference, held in Escuminac, was made possible as in past years by the kindness of Mr. Gordon in giving nominal railway rates. Its success was due to the splendid way in which the people of Escuminac entertained the teachers and to the services of Mr. McBurney, which were greatly appreciated.

Sherbrooke.—The five elementary schools of Sherbrooke are thoroughly organized, well equipped, have competent staffs and are efficiently supervised.

While good work is being done throughout the sustem, the inspection seemed to show that as a rule best results are obtained when a teacher has not more than one grade. This advantage might be secured for North Ward School by combining with Cambridge, a plan which has already been suggested and is under discussion.

There is a notable drop in attendance from 126 in Grade VI to 88 in Grade VII. It would be interesting to know the cause. Do pupils in the Ward Schools think their education is finished because Grade VI is the highest taught in some of these schools, do a number fail in examinations or is there some other explanation?

Orford and St. Elie d'Orford.—The schools of these municipalities are open only nine months so that the work required by the course of study cannot be properly completed. No. 1 Orford is in good condition. It would be greatly to the advantage of No. 3 if the pupils could be conveyed to the schools of the city of Sherbrooke.

Successful teachers recommended for bonuses.—Miss Daisy Buckley, Leggatt Point; Marion Dow, Gascons West; Mrs. Thomas Young, Oak Bay Mills; Miss Myrtle Court, Pointe à la Garde; Ella Lawrence, Sayabec Station; Mrs. H. Sinclair, New Richmond; Miss Lillian Powell, Corner of the Beach; Alice Buckley, Gaspé.

Successful teachers debarred from two bonuses in succession.—Miss Jean MacWhirter, Grand Cascapedia: Miss Hilda Lenfesty, Ha dimand.

Strathcona Prizes recommended.—Haldimand, Miss Hilda Lenfesty; Sayabec, Miss Ella Lawrence; Grand Metis, Miss Daisy Buckley; Roseville, Miss Emma Bartlett; Gaspé Bay South, Miss Eileen Ascah.

Bonuses to deserving municipalities.—Gaspe Village, Metis Beach, Mann, and Douglastown.

CLASSIFICATION OF MUNICIPALITIES

Excellent.—Sherbrooke, Gaspé, Sayabec, Shigawake, Port Daniel Centre, Roseville, Mann, and Barachois.

Good.—Orford, Cox, Perce, Port Daniel East, St. Godfroi, Schoolbred, Cap d'Espoir, Grand Metis, Metis Beach, Haldimand, New Richmond, and Sellarville.

Middling.—Fontenelle, Grand Grève, York, Port Dabiel West, St. Charles de Cap'an, Paspebiac East, Maria, and Gaspé Bay North.

Poor.—St. Laurent de Matapedia, Matapedia, Gaspé Bay South, St. Bonaventure de Hamilton, St. Pierre de Malbaie, Broadlands, Restigouche, Douglastown, Seal Rock, and Edmonds.

Unclassified.—St. Elie d'Orford, and Red Head.

I have the honour to be, etc.,

LEWIS J. KING,
Inspector of Schools.

MINUTES OF PROTESTANT COMMITTEE

QUEBEC, December 7th, 1928.

On which day was held a regular meeting of the Protestant Committee of the Council of Education.

PRESENT:—The Honourable W. G. Mitchell, K.C., D.C.L., in the chair, Reverend A. T. Love, B.A., D.D., W. M. Rowat, Esq., M.D., V.M., W. S. Bullock, Esq., M.L.A., Right Reverend Lennox Williams, D.D., Reverend E. I. Rexford, D.C.L., LL.D., A. K. Cameron, Esq., Rev. A. H. McGreer, M.A., D.D., P. C. Duboyce, Esq., B.A., LL.B., sinclair Laird, Esq., M.A., B.Phil., J. A. Nicholson, Esq., M.A., LL.D.

The minutes of the previous meeting were read and confirmed.

Apologies for absence were submitted on behalf of Howard Murray, Esq., O.B.E., Milton L. Hersey, Esq., M.A.Sc., LL.D., Honourable Jacob Nicol, K.C., M.L.A., Andrew R. McMaster, Esq., K.C., Honourable Justiec John E. Martin, George F. Calder, Esq., B.A., and Claude A. Adams, Esq., B.A.

The death of Professor A. W. Kneeland was formally announced to the Committee when it was moved by Dean Laird, seconded by Dr. Rowat, and carried by a standing vote that "The Protestant Committee of the Council of Education desires to place on record its profound regret at the death of Professor A. W. Kneeland who was the senior member of the Committee, having been appointed in 1888. His whole life was devoted to the cause of education, as teacher, professor in the normal school, member of the Protestant Central Board of Examiners, and member of this Committee, in all of which capacities he rendered most loyal and faithful service. A man of high and unselfish attention to duty, he influenced, in no small degree, his colleagues and students by his example of life-long service in the cause of Protestant education in his native province."

The chairman then called for nominations for the election of an Associate member of the Prctestant Committee to replace Mr. Duboyce who has been made a member of the Council. Mr. Erastus G. Pierce of Sherbrooke was then proposed by Messrs. Duboyce and Bullock, and there being no other nomination, Mr. Pierce was declared to be elected unanimously.

Mr. Cameron reported, for the information of the Committee, on the recent consolidation in Dundee and Huntingdon, and the proposed consolidation which will probably be made effective in the township of Stanstead. This consolidation when effective will, with that of Fitch Bay, include nearly all the schools of Stanstead township.

Dr. Rexford reported on behalf of the sub-committee on School Inspection to the effect that arrangements had been practically completed by which an increase of some $1,700, would soon be made to the amount now allotted by the Government to the expense of inspection of Protestant schools, and that steps would be taken to re-arrange the districts of inspection in such a way as to reduce the number. The saving in this reduction of numbers with the additional share of the appropriation would be sufficient to improve the condition

of the Protestant inspections, particularly in regard to the travelling expenses which are entirely inadequate in view of the greatly increased hotel and travelling rates in recent years. The report was adopted and the sub-committee was continued, to report after the proposed plans had been completed.

Mr. Cameron, convenor of the sub-committee on educational meetings reported that three had been held since the last session of the Committee, one at Cookshire, one at Stanstead Village, and one at Knowlton. The attendance at these meetings had been much larger than in former years at similar meetings, a pleasing feature being a large attendance of members of school boards in the places where the meetings were held, and in neighbouring school municipalities. The report showed that a lively interest is being taken by the Protestant population in the improvement of Education in this Province.

The chairman then completed the membership of the sub-committee of which Dr. Rexford was to be convenor, to put into effect the recommendations regarding the training of Retarded and Mentally Defective Children of School Age, by nominating Miss Derick, Mr. McMaster, and the Director of Protestant Education, this committee having power to add to its numbers and to call in experts for advice, consultation, or assistance. The chairman of the Committee, as usual, is ex-officio, a member of this sub-committee.

It was moved by Messrs. Cameron and Laird, and resolved, that a sub-committee be appointed to consider the question of the improvement of school grounds, buildings and outhouses. The sub-committee was appointed as follows:—Dr. A. H. McGreer, Convenor; Dr. Rexford, Mr. Duboyce, Mr. Cameron, Mr. Pierce and Dr. Rowat.

The Director of Protestant Education reported regarding recommendations of the Teachers' Convention in favour of specifying limits in Algebra and Geometry in Grade IX, and of providing examinations in these subjects. The report was adverse to the recommendations and the Committee, therefore, declined to take any action at present in the direction suggested.

It was further reported by the Director of Protestant Education that the Latin text-book Limen which had been submitted to class-room tests in the Westmount schools did not appear to give results that would justify a change from the text-book now in use. This report was based upon one received from Mr. Chalk, Superintendent of the Westmount Schools.

The following resolutions, submitted to the Text-Book Committee of the Provincial Association of Protestant Teachers, and approved by the Executive of that body, were considered.

Resolved 1. "That the Protestant Committee be asked fo formulate and make available for teachers and examiners a statement of the educational objective aimed at in having the subject of Chemistry on the Course of Study. (e. g. Is the objective memory work, or a training in scientific method?)"

2. "That the examination be set in such a way as to give due credit to pupils who do laboratory work. At the present time the type of examination practically forbids this type of work."

3. "The Protestant Committee of the Council of Education be requested to take the necessary steps to carry out the law recently passed by the Provincial Legislature conferring upon teachers various degrees of the Order of Scholastic Merit."

1. After discussion it was resolved that the Director of Protestant Education be asked to represent to the teachers the fact that no school, under the present regulations, is permitted to present candidates for the examination in Chemistry unless the requisite laboratory facilities are provided, and this fact is reported by the Inspector of Superior Schools.

2. That the Director of Protestant Education be asked to communicate with the School Leaving Examination Board and the Examiner in Chemistry, drawing attention to the requirements for teaching Chemistry, the complaints about previous examinations in connection with memory questions and the desirability of affording in examination questions some credit for students who have thus been trained in laboratory work.

3. In reference to the third resolution it was decided that a sub-committee should be appointed to report upon the advisability of taking steps as suggested therein, for making effective the recent act of the Provincial Legislature conferring the various degrees of the Order of Scholastic Merit. The sub-committee consists of Dr. Nicholson, Convenor, Messrs. Adams, McMaster, Lafleur, and the Chairman, ex-officio.

Mr. Duboyce asked whether his sub-committee on examinations which had been appointed on account of a report made by Dr. Rothney in September, 1927 should be expected to take any further action now that Dr. Rothney had ceased to be Inspector of High Schools. It was decided that there were features of that report which deserve consideration, and the sub-committee was, therefore, reconstituted, with the same membership as before, and with Mr. Duboyce as chairman.

Upon motion of Mr. Duboyce, it was agreed to pay from the funds of the Committee a sum, not exceeding fifty dollars, towards the costs incurred by the school board of Richmond for providing suitable equipment for serving luncheon in the High School.

The meeting then adjourned to Friday the 22nd of February next, unless called earlier by order of the chairman, the next meeting to be in the Medical Building of McGill University, Montreal.

(Signed) G. W. PARMELEE,
Secretary.

(Signed) W. G. MITCHELL,
Chairman.

OVERSEAS EDUCATION LEAGUE — SUMMER 1929

14th ANNUAL TEACHERS' TOUR. Great Britain and France together with Switzerland (to include GENEVA at the time of the meeting of the WORLD FEDERATION OF TEACHERS' ASSOCIATIONS) and Germany. **58 Days**
Sailing from Montreal by the S. S. "Duchess of Bedford," July 3rd.
Returning by "Duchess of Richmond," August 21st..... **$495.00**
This includes ALL transportation, hotel accommodation, gratuities and Programme Costs.

6th ANNUAL STUDENTS' TOUR. Glasgow, St. Andrews, Edinburgh, English Lake District, North Wales, Ludlow, Bristol, Stratford-on-Avon, Cambridge, Norwich, London, Paris, Cherbourg..... **68 Days**
Sailing from Montreal by S. S. "Metagama," June 22nd. Returning by "Duchess of Richmond," August 21st..... **$475.00**
This includes ALL transportation, hotel accommodation, gratuities and Programme Costs.

3rd ANNUAL SUMMER SCHOOL, FRENCH. Lycée Victor Duruy, Boulevard des Invalides, Paris. First 4 days of this Course will be spent at Lisieux and the last week in London.

1st ANNUAL SUMMER SCHOOL in ENGLISH, providing for two weeks at Lady Margaret Hall, Oxford, two weeks at Stratford-on-Avon, and two weeks in London.

APPLICATION LISTS for both **TOURS** and the **SUMMER SCHOOLS** will definitely CLOSE on or before JUNE 1st, 1929.
APPLICATION FORMS may be secured from
HENRY BUTTON, Hon. Secretary, Eastern Division, Aldine House, 224 Bloor St. West, Toronto - or
MAJOR F. J. NEY, Honorary Organizer
OVERSEAS EDUCATION LEAGUE, 607 Boyd Building Winnipeg

University of Bishop's College

FOUNDED 1843—ROYAL CHARTER 1853

The only College in Canada following the Oxford and Cambridge plan of three long academic years for the B. A. Degree.

Complete courses in Arts and Divinity. Post-Graduate course in Education leading to the High School diploma. Residential College for men. Women students admitted to lectures and degrees. Valuable scholarships and Exhibitions.

The College is situated in one of the most beautiful spots in Eastern Canada. Excellent buildings and equipment.

All forms of recreation including golf; splendid gymnasium. Four railway lines converge in Lennoxville.

For information, terms and calendars, apply to:

REV. A. H. McGREER, D.D., PRINCIPAL

or to:

THE REGISTRAR, - Lennoxville, Que.

JUIN 13 1983