

The
**WESTERN SCHOOL
JOURNAL**

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Dec. 18

— INCORPORATED —

*The Bulletin of the Department of Education for Manitoba
The Bulletin of the Manitoba Trustees' Association*

THEY'LL COME BACK BETTER

They say we'll come back callous when our service here is done;
They say we'll come back hard and rough and rude;
They say our better natures will be dulled by what we've seen,
Our very instincts bestial and crude.
They talk about the problem that they'll have upon their hands
When Peace shall end our present usefulness;
They cry, "Think what a million discharged troops will mean to us—
A menace to our girls—and boys no less."

We were men ere we enlisted—we are doing men's work here—
Shall we then be less than men when we return?
Shall the others reap the benefit of all our sacrifice,
And then ourselves, like thieves and outcasts, spurn?
Yes, our hands are red with slaughter, but our hands are free from stain;
We kill, but do we love the work? Not one,
And when the boys come back again, forget all else but this—
That each of us is some good mother's son.

—A Toronto Boy in the Princess Pats.

PRIMARY SCHOOL AIDS

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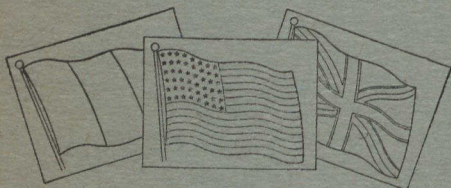


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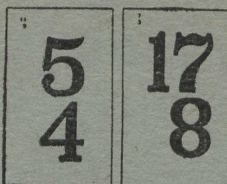


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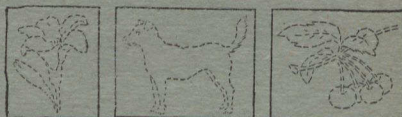


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W. J. SPENCE, Registrar University of Manitoba, Winnipeg

REPORT OF THE GOPHER CAMPAIGN IN MANITOBA SCHOOLS 1918

The schools of Manitoba have done their bit towards increasing production, and they have done it in time. They got 200,000 gophers in April, and this will mean a million less to destroy the wheat crop during the summer. One hundred and fifty rural schools report having destroyed about 150,000 gophers, or an average of about 1,000 per school. This is equivalent to about 10 per cent. of the gophers that winter through.

The Elgin Consolidated School wins the Pathephone, and Records, with 2,362 gopher tails. The Beulah Consolidated School is second, winning Russell-Lang's \$40.00 library set.

The Winkler School wins the Columbia Grafanola outfit, with 3,352 tails. Souris school, second, wins Prof. Jackson's award of 9 volumes of Cassell's illustrated History of England, bound in morocco leather.

The Coultervale Two-roomed School wins the Manual Training Bench, and the St. Joseph School wins the fully-mounted 18-inch Globe, both given by The E. N. Moyer Co., Winnipeg.

The rural schools get the Department of Agriculture bonus which, this year, will amount to over \$2,000. This is an annual affair, and next year the Department will give same bonus; and, when it is known as a definite annual arrangement, the schools will be better prepared for it and greater results will be made possible.

It is interesting to know that the small children in this campaign have perhaps gotten a greater number of gopher tails than the older children. A few might be cited:—

Lucien Boulet	Age 10	Dunrea	637 tails
Walter Hickman	" 7	Ninga	320 "
W. Hammond	" 10	Elgin	302 "
E. Sadler	" 8	"	193 "
Geo. McBurney	" 8	"	172 "
Harvey Chambers	" 10	"	139 "
Joseph Bonin	" 7	St. Joseph	150 "
Doris McCullagh	" 7	Killarney	205 "
Edith Morris	" 9	"	393 "
Amy Emerson	" 10	"	188 "
Tommy Day	" 10	"	187 "
Garnet Jaques	" 8	"	153 "
Emily Spence	" 9	"	108 "
Walter Sims	" 10	La Riviere	153 "
Elmer Henderson	" 8	"	55 "
Morgan Thompson	" 10	Ingelow	332 "
Jackie Edkins	" 6	Clearwater	203 "
Lillie Barnard	" 7	Lena	125 "
Gertie Barnard	" 9	"	93 "
Norman Barnard	" 6	"	87 "
Robert Church	" 9	"	76 "
Harry Allan	" 8	"	68 "
Cecil Foster	" 6	"	56 "
Frank Giddings	" 7	"	39 "
John Hicks	" 7	"	31 "
Gladys Stevens	" 7	Roseland School	349 "
Hilbert Kidd	" 8	"	129 "
Eleanor Ashton	" 6	Cameron	73 "
Winald Nixon	" 9	Snowflake	101 "
Gerald McIntosh	" 7	Dropmore	217 "
Jimmy Harper	" 10	Bolsscvain	202 "
Eugene Coulter	" 8	Wakopa	155 "
Ruben Sanson	" 8	Crystal City	115 "
Ida Bate	" 10	Desford	161 "
John Steer	" 6	Glendenning	176 "
Harry Kemp	" 9	Regent	182 "
Alex. Shoemaker	" 9	Woodnorth	122 "

There were many on the list, of the ages of six, seven and eight, who obtained a very creditable number of gopher tails. Several schools have asked to give their bonus to the Red Cross. The co-operative and school spirit has developed through this contest.

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The Western School Journal

(AUTHORIZED BY POSTMASTER GENERAL, OTTAWA, AS SECOND CLASS MAIL)

VOL. XIII

WINNIPEG, JUNE, 1918

No. 6

Editorial

Sympathy

For what do people yearn when they are in trouble? Sympathy. For what do they demand when they are conscious of need? Sympathy. This is the quality which is of supreme value in the teacher. If she lacks it she should find another calling.

Not long ago I met a teacher who was beloved exceedingly by her pupils. They were with her before school, with her at noon, and with her on the way to their homes. To her they committed all their cares, and on her they loaded all their troubles. The light of the foster-mother shone in her eyes, the glory of a ministering angel illumined her face. Her soul was radiant because her heart was warmed with the celestial fires of love. Her ministry was a perpetual joy—because there is ever joy in the presence of happy and contented childhood. As I watched her and her little flock I could but compare them with other folds and other shepherds that I knew in other lands. There came to mind a man who held his boys on the rack for over an hour at a time torturing them with unnecessary questioning. How thoroughly they detested him! How far away he was from them in thought and feeling! Yes, and there was one woman—a virago. What a voice! What a woman! Lack of courtesy, lack of affection, lack of womanliness!—how should such a one be permitted to direct young life? Yet she endeavored to justify everything by pointing to the examination returns, as if the expression of pupils on a written page could measure the character of the life that is being de-

veloped. And it is true, above everything that the measure of a school's usefulness is its capacity for developing life rich in beauty and wisdom and love.

The fundamental condition of success in teaching is the possibility of two minds co-operating in a common effort. The mind of the teacher must be in perfect accord with the mind of the pupil. This is impossible if there is anything in word or deed or attitude that prevents the free play of worthy emotion, and the Christian virtues are worthy or they are worthless. If they are worthy they should find a recognition in every school. These Christian virtues are not harshness, cruelty and injustice, but love, patience and brotherly-kindness. And there is ground for believing that where these virtues abound all other things will be added. If one had to think only of examination results, it would pay him to begin by winning the sympathies of his pupils. If he had only his own happiness to consider he would find it chiefly on the goodwill of his pupils. For truth can flourish only in a congenial atmosphere, and happiness is based in good-fellowship.

The world is not what it was a few years ago. There are many broken hearts and many orphan children. What do they need? On every hand comes the appeal for true and generous sympathy.

The Red Cross Drive

It is not pleasant, and perhaps it is not quite right to dwell upon the horrors of war when talking to children.

Whatever they do in Germany, we do not want to chant hymns of hate on British soil. There is a better and more

contribute to the common cause. Let us talk in this vein to our pupils; let us live it out in the school and on the ground, until it becomes the very essence of our being to give. And verily it is more blessed to give than to receive.



INSPECTOR J. W. GORDON
President, Manitoba Educational Association

effectual way. With young children, the better way is to give them something to do to help the brave men who are sacrificing their lives for God and country. Let every pupil hear about the Red Cross work; let every one, that is able, do something; let every one be a missionary in his own home. The drive in Winnipeg yielded double of what was expected. The country can do as well as the city. The city people—some of them—are giving till it bleeds. Will not those in the towns and villages and rural communities do the same? Sacrifice is the word of the hour. It is the only word that should be honored today. Let the spirit of sacrifice get into the schools, and through the schools into the homes and the councils and other deliberative bodies. The great question for a man these days is not, how much he can make and hoard, but how much he can

Holidays

The Journal wishes teachers and pupils a very pleasant vacation. The process of education goes on for both teachers and pupils whether school keeps or not. Those who remain at home on the farm get the education of the fields. Those who go to the lakeside get the education of out of doors. In either case they get the education that comes from doing things. There is nothing greater and better in education than this.



MR. R. MARION
Member of the Executive of the Manitoba
Trustees' Association

THE OFFICIAL ORGAN OF THE DEPARTMENT OF EDUCATION

Departmental Bulletin

ANNUAL REPORT

The school year will terminate on June 30th. At that date the following reports must be prepared by the teachers in each school:—

- (1) Half-yearly report for the term.
- (2) Annual report for the year
- (3) Free Text annual report.

Teachers will please note that only one annual report is required from each district. In any school district employing two or more teachers the assistant teachers will hand to the Principal the statements of statistics for the year called for in the annual report. The Principal will then prepare a summary of these statistics and make out the annual report for the school district.

Each teacher should complete the teacher's portion of the annual report in both forms in the register, one of these forms will then be handed to the secretary-treasurer in the case of a one-room school or to the principal in the case of a graded school. The other form remains in the register for future reference.

All these reports must be prepared and given to the secretary-treasurer before the teachers leave their schools for the mid-Summer vacation, and trustee boards should not pay their teachers at the end of June until these reports are completed and delivered as required.

GRADE XI. AND FARM WORK

The Advisory Board has decided to provide a special examination in Grade XI. some time in the Autumn for students in Grade XI., if any, who

have to assist at home on the farm and who for this reason will be unable to write upon the regular examination in June.

REPORT OF COMMISSION APPOINTED BY THE DEPARTMENT OF EDUCATION AT THE JOINT EXPENSE OF THE DEPARTMENT AND THE RURAL MUNICIPALITY OF LANSDOWNE, BASED ON THE FOLLOWING RESOLUTION OF THE COUNCIL:

“Whereas certain adjustments of School Districts are proposed which raise serious issues; and whereas it is expedient that the Council be in possession of such information as will enable it to deal intelligently with the question of school accommodation and the consolidation of School Districts throughout the Municipality; Be it resolved: That the Department of Education be asked to appoint a Commission to enquire into the school accommodation within the Municipality, the municipality bearing one-half of the

expense. Such Commission to report, if possible, some feasible plan or plans for the consolidation of school districts, whether union or otherwise.”

Report

To the Council of the Rural Municipality of Lansdowne:

Gentlemen,—The Commission of enquiry appointed by the Department of Education at your request begs to report as follows:—

The Commission held in all, five meetings, three of which were public

—one at Glenella on March 19, one at Keyes on March 21, and one at Arden on March 22. Besides these, the Commission met at Neepawa March 12 to plan its work, and at Gladstone at the close of the enquiry to draft this report. Also one of the Commissioners employed March 20 to attend a meeting at the Village of Birnie, at which a consolidation which will probably embrace a portion of your Municipality, was under discussion.

At the public meetings many rate-payers were present, who had been invited to attend by notices sent to the secretaries of the various school districts, for distribution, and we are pleased to report that considerable numbers responded to the invitations and took much interest in the subject of the enquiry.

An examination of a school map of your Municipality reveals many weaknesses and injustices in the present division of the territory for school purposes. We found many cases of land on which the school rates go to the upkeep of a school which can not in any way accommodate the children living on such land. In view of this, and the fact that the majority of the school buildings are old and improperly planned, badly lighted and ill ventilated, and in the ordinary course will soon pass out of use, the present seems an opportune time to consider readjustments that will bring the accommodation up to a better standard, and increase its effectiveness.

We are of the opinion that such accommodation can be improved by gathering the pupils into larger units and by providing for more regular attendance by transportation of the children at the expense of the district. These units should not consist of less than forty pupils, requiring at least two teachers, and we consider that up to a certain point, each addition to such unit, which would require the employment of an additional teacher would improve the efficiency of the school. A change of this nature can only be effected by an extensive use of consoli-

dation. With regard to this principle, we have no hesitation in saying that it has proved efficient in this Province during the past ten years, and is entirely feasible at any point within your Municipality, for distances varying from six to eight miles, but we think that the principle is best applied and most economical where direct routes of about $7\frac{1}{2}$ miles distance can be made to serve.

With these general facts in view, we are of the opinion that with consolidation at Glenella, Molesworth, Ivanhoe, Keyes, Arden, and Berton, within the Municipality, with the present consolidation at Plumas, Eden, and Kelwood extended to include what additional territory they could readily serve adjacent to them within Lansdowne, and if as seems probable now, consolidation could be brought about at Birnie, Riding Mountain, and Rosedale church, your Municipality would be well served and its school accommodation greatly improved.

(Here follow the details).

You will note that we have continued the rural district of Ayr. Our reason for so doing is that we could not recommend anything that would accommodate the whole of this area and we feel that sufficient territory must be left to support a school at this point.

For obvious reasons, Tenby and Glencairn districts have been left as at present. They must look for development outside of your Municipality.

The foregoing recommendations can be more readily understood by reference to the map which accompanies this report.

Your Council will note that in suggesting boundaries between consolidated areas we have frequently followed the centre lines of sections. Such division prevents the duplication of van routes and in many cases may reduce the length of a route by a mile, as a van passing on any given road should serve the residents living on both sides thereof.

In considering the problem with which your Council has to deal and up-

on which we have been asked to report, it might be well to consider if a possible solution does not lie in submitting to the ratepayers a by-law for the formation of a municipal school board. There is provision in the Public Schools Act for such a step. The municipal board has much to recommend it. It has the endorsement of many high educational authorities, and it is more than probable that this policy will be generally adopted by the three prairie provinces before very long. It is already the law in British Columbia and is said to be giving good satisfaction. Should a municipal school board be formed, the present school districts would automatically cease to exist and their boundaries disappear. It is safe to say that with the disappearance of these boundaries many of the difficulties standing in the way of a satisfactory organization of the Municipality would be removed, for there is no

single factor that hinders and makes almost impossible a readjustment that will commend itself to the bulk of the ratepayers as the delimitations of the various school districts.

Owing to the fact that we have been unable in the time at our disposal to visit all parts of the Municipality, particularly the districts of Glenallan and Oakleaf, we do not feel justified in submitting this as other than an interim report. Should your council consider it expedient to have the enquiry continued at any time we would be pleased to take it up again; to visit those parts with which we have been unable to come into touch and make a final report on the situation.

(Signed)

A. A. HERRIOTT,
Chairman of Commission.
H. N. MacNEIL,
A. B. FALLIS.

Dated at Gladstone, March 23, 1918.

TO THE PRINCIPALS AND TEACHERS OF THE CANADIAN AND AMERICAN PUBLIC, SEPARATE AND OTHER SCHOOLS

Will you kindly bring before the boys and girls, the following, and have it posted in the schools:

That through the generosity of Lavonia Stockelbach, New York, U.S.A., the accompanying very liberal prizes are offered to be competed for in the Natural History section of the Canadian National Exhibition, and that these competitions are open to all school boys and girls, city or country, and that the Exhibition Management hope all schools will be stimulated and make a very hearty response in entries.

Never in the history of the Exhibition has such a fine opportunity been offered for entries and exhibits in these classes, or an opportunity for the schools for showing their interest in the collection and study of Botanical and Entomological specimens.

We shall be glad if you will use your influence to make the 1918 Exhibition a record one for these exhibits. The

subjects treated in these sections bear more than anything else on conservation of food and forestry resources, and unquestionably, Entomology figures very largely in the balance of nature in the foregoing.

Class 363. Collections and drawings must have been made in the year 1918.

All exhibits must be the personal work of the exhibitor, who must not be over 16 years of age.

Sec. 1.—Best collection of mounted specimens of tree leaves and flowers, each specimen to be mounted separately on paper of uniform size. \$12, \$8, \$5.

Sec. 2.—Best collection of Drawings of tree leaves and flowers, paper uniform size. \$12, \$8, \$5.

Sec. 3.—Weeds. Best collection injurious to farm and garden crops, paper uniform size. \$7, \$5, \$3.

Sec. 4.—Woods, illustrating the forest trees of Canada. \$7, \$5, \$3.

Sec. 5.—Leaves. Best collection of all Canadian trees and shrubs. \$7, \$5, \$3.

Sec. 6.—Best collection of Botanical specimens and drawings of trees, flowers and fruit, Caltha Prize (for all sections). \$25, \$15, \$10.

Sec. 7.—Insects. Best and most neatly mounted collection, not less than 150 species representing the seven orders, properly labelled with scientific names. \$25, \$20, \$10.

ADVISORY BOARD NOMINATIONS

Dr. D. McIntyre, Winnipeg, and Mr. A. J. Hatcher, Brandon, have been re-elected by acclamation as the representatives of the teachers upon the Advisory Board for a term of two years, dating from August 1st next.

The School Inspectors have elected Mr. J. W. Gordon, Manitou, as their representative for the two year term beginning August 1st next.

There will be an election for the position of representative of the High School teachers. Mr. R. T. Hodgson and Dr. C. F. Gillen have been nominated. Mr. E. A. Garratt, who has represented the High School teachers for several years, was re-nominated but felt that he had served long enough and has withdrawn.

PLUMAS HAS FINE NEW HOME CONSOLIDATED SCHOOL

The new school building erected at Plumas for the consolidated school district organized at that point last year was formally opened on Tuesday last by Hon. R. S. Thornton, minister of education.

The building contains four classrooms and a science room which is being used as a classroom, the attendance already having outgrown the accommodation originally planned. The basement contains excellent playrooms for both the boys and the girls, and a lunchroom, where hot lunches are served to the children. The classrooms are well lighted, well heated and ventilated, and commodious. Indoor toilets have been provided. The building also contains a library and a teachers' room. The building cost in the neighborhood of \$20,000, and the site contains five acres, which will provide ample space for play and school gardens.

Four vans are employed and between 70 and 75 children are transported.

Hon. Dr. Armstrong, provincial secretary, in a brief address, compared school conditions when he was a pupil, and later when he was a teacher, with the opportunities for education furnished the children today, pointing out

the advance in the physical plant and in the methods of teaching. He spoke of the value of medical inspection of the children in the schools, referred to the progress of the Plumas school and the excellent standing attained by many of these pupils in the past, and predicted an even more brilliant future educationally for the community under the new conditions provided through consolidation.

Reeve Smith, of the municipality of Westbourne, declared himself in favor of the expenditure of money for educational purposes.

Hon. Dr. Thornton, minister of education, congratulated the community on the fine buildings which had been provided and upon the fine spirit which prompted it. He stated that the ideal of a community frequently is expressed in its buildings, and Plumas community through its new school held up the ideal of education. On behalf of the department, he thanked the community for its splendid contribution to the educational plant of the province. He desired the glory of the province to be the pride of its people in its educational institutions and particularly in its provision for education in the public and high school grades.

THE OFFICIAL ORGAN OF THE MANITOBA TRUSTEES' ASSOCIATION

Trustees' Bulletin

TEACHERS, TEARS AND TRUSTEES

The crosses borne by men and women in this vale of tears are usually associated with some form of injustice. No doubt there are crosses for which our social fabric is not directly responsible, but man's inhumanity to man is responsible for most of the heavy crosses that humanity bears.

On a certain afternoon after four o'clock a girl teacher walked dejectedly from her school to her boarding house; entering the room she threw herself on the bed and gave vent to a bitterness of feeling in tears. The school was the pride of the district. The taxpayers had unpocketed ten thousand dollars in its construction. A tall pole in front of the school house floated the Union Jack, emblem of justice, liberty and democracy. The educational interests of the district were satisfied—the ratepayers who paid the taxes, the trustees who builded the school, the parents who sent their children to that school, and the secretary who secured a teacher answering to his advertisement. On the evening of the afternoon mentioned, these all blew out their lamps, jumped into bed and pillowed themselves in peaceful slumber, all unconscious of the girl who wept.

The girl is one of many. The circumstance is an evidence that we have not yet reached the place in rural educational systems over which we may be unduly complacent. Indeed, the spectacle of a strong, husky province placing on the shoulders of a young girl a heavy cross—physical exhaustion, mental suffering and tears—ought to produce emotions other than complacency.

In the instance referred to, the secretary was successful in securing a teacher who possessed the requirements

he asked for. She had the knowledge of readin', 'ritin' and 'rithmetic, and she had also the ability to impart that knowledge to her pupils. But accompanying the process was a necessary discipline—order, which she did not impart. Herein is the bitterness of the cup. The boys and girls ought to possess and express in their character and school manners the principles of the flag which flutters outside, chivalry and courtesy mottoed on the walls inside, is not our purpose to discuss. The outstanding fact discovered by most teachers is that they do not. Discipline is enforced. This girl came, inspired by the hope that she would maintain order by the moral force of her personality. Her hopes were not realized. The school did not respond to an investment of pearls, but were ever on the watch for an opportunity to break through in riotous disorder. Three-fourths of the girl's energy was exhausted in suppressing weedy demonstrations of youthful energy. Her remaining strength was available to do the things required by the Department of Education and the trustees. The girl felt that she was receiving a salary for one-fourth efficiency and three-fourths wasted energy. Hence the disappointment, humiliation and tears.

We believe that carrying crosses is a great factor in bringing to earth the kingdom of heaven. We also believe a terrible jolt on the jaw of an injustice will go a long way toward reaching the same objective. And we would like to see such jolt administered to that protruding feature of the injustice which imposes upon some frail girl the obligation of enforcing the discipline of her school. It is unjust to put the personality of any young girl to such a

test. It is too much to expect boys and girls in the early teen age to be governed by personality. The moral values of the most wonderful Personality the world has ever known were not perceived by the majority with whom he associated. In many instances powers of moral perception are not provided for in the home, and the extra weight is loaded on the teacher. It is unjust to submit the order of the school to the survival of the fittest in the will to power. Not unfrequently the price is paid in hard lines, a masterful and masculine bearing — ill-set on otherwise gentle countenances and forms. As this is written there are schools we know personally where the scholars sit in unwholesome fear. There are also schools we know at this present, where the scholars have broken through in Boisterous Russian liberty.

We would suggest as a solution of the problem, the transference of the obligation from the shoulders of the girl to the shoulders of our civic organization—an authority vested outside the school, which would eliminate read-

ing the riot acts and flourishing the big sticks in the school. In disciplinary matters the teacher should have no more demands on her energy than the writing of a note referring the scholar of misdirected activity to the appointed powers, which powers would deal with him as the case required, and should be of such nature as to sufficiently impress the school. This unobtrusive but effective authority should in no case put any restraint on the wholesome development of the boys and girls. This system should give unrestrained and appreciated expression to the teacher's companionship. It should give greater efficiency to the teacher in the work required.

The suggestion presents a somewhat far-reaching perspective with a hazy horizon. We are not attempting to describe a definite way out. There may be one. If not, then young and inexperienced girls will still be appointed to backward and unruly schools, and will continue to weep.

—H.W.M. in *The Whitewater Packet*.

MUNICIPAL SCHOOL BOARD AND TECHNICAL EDUCATION

A public meeting was held in Pearson's Hall on Saturday night last to hear the opinions of eminent educationists on this matter and to discuss the possibilities of the adoption of the principle for Selkirk and the surrounding districts.

There was a poor attendance to encourage either the work or the speakers, but all present were agreed that the addresses and arguments put forward by the speakers were both an education and a treat.

Mr. Wm. Iverach, of Isabella, president of the Manitoba Trustees' Association, was the first speaker and he dealt, in a most able manner, on the question of Municipal School Boards, showing in most unmistakable terms that the whole municipality, Selkirk

included, had all to gain and nothing to lose by such a co-operation of forces. By it, the speaker declared you bring about the elimination of "The Boss Trustee" who hampers education and progress by his high handed ways, or starves out the teacher by going away a few months leaving such teacher without salary until he sees fit to return. You get out of the rut of "Old Fashioned Ideas" of the trustee who blocks the way of progress by his obsolete ways on the principle "that it was good enough for me when I was a boy and it is good enough now." Then there is the trustee who will go to the cheapest market, both in teaching power and material; this again hampers progress and produces, among our pupils, most disastrous results.

After dealing with several other types of selfish and indifferent trustees, the speaker passed on to the financial side of the question which was and is of paramount importance to the ratepayers. Here too, he showed, that by the consolidation of all districts into one, a better business management would be erected, an-uniform and more equitable rate established, more and better accommodation provided, greater security of position given the teacher, better education for the pupils, provision of the necessary technical instruction for both boys and girls, in fact all that goes to mark the way of progress on true educational lines.

Dr. W. A. McIntyre, Principal of the Provincial Normal School, Winnipeg, was the next speaker, and, as one of our provincial authorities on education, was listened to with marked attention. The speaker dealt very fully on the subject of "The Child, Child Life, and Child Education," showing in a most lucid way, the great crying need for better education on all lines, religious, social and moral, many valuable lives being lost to the empire through mental, physical and moral ignorance. The speaker brought out in telling, forcible language the Child's "Right" even to be born into the world's right. His right to live on right lines when born, his right to come into a right political world as he grows up, his right to live and move in a right religious and social world, to be brought up in, and enter into a right family, and finally his right to be educated in a "Right School." Here the programme should consist of study, work and play. Here too, he should find the spirit of right, reverence and courtesy. The teacher should be courteous too, and the power of co-operation between teacher and pupil would thus evolve the spirit of:—"Each for All, and All for Each." Self-respect would find its place too in the right kind of school and the whole moral and social life of the community would thus be uplifted by the possession of such an institution in its midst.

The establishment of a Municipal School Board would both directly and indirectly make provision for all this either consciously or unconsciously; provision too would be made for all kinds of sport, and here too, the right spirit of self-sacrifice of give and take of kindness and forbearance in fact the whole "esprit-de-corps" of humanity to humanity would be fully developed and both school and community would become one whole, and real happy family.

To say that the speaker was listened to with attention would be putting it mildly judging by the many expressions of approval from those who heard him and the great pity was that more parents and ratepayers were not present.

Mr. Warters, Superintendent of Manual Instruction for the Province, and for re-training of our returned soldiers, was the next to speak.

Mr. Warters, who is a thorough master of his subject, began by emphasizing the necessity of training mind, thought and action on a co-operative principle, and not to be all book work or study, not all exercise of the mind, nor yet all manual work, but a co-operation of the whole to enable the boy to become a real master of himself, so that he may know just what to do, how to do it and when. To do this thoroughly, tools are wanted and tools must be had and those of the best, both theoretical and practical. Teachers must be had, get them of the best, let the co-operation of the parent, ratepayer and trustee come into play, and get a good article even if you must pay high for it. The speaker here instanced the fact, that a horse-trainer is paid far more than a teacher thus placing the horse of higher value than a human life and its future. The oft repeated co-operation of parents, teachers and trustees should come into full play, parents should know and get what they want for their child, go to the school and get it, go to the trustees and insist on it. The ideals of study and occupa-

tion, together with free choice of same. The life and aptitude of the boy and girl should be studied from the first, and thus the education of the child would have a complete aim, and unity of purpose.

G. W. Prout, M.P.P., fully endorsed the remarks of the speakers both individually and collectively, and further contended that they made out and produced an unanswerable argument for the immediate institution of a Municipal School Board for Selkirk

and the Municipality of St. Andrews and that he would be only too pleased to do all he could to further such a plan of co-operation.

The chairman, Mayor Gemmel, also endorsed the speakers' remarks to their fullest extent.

The promoters tender their heartiest thanks to the ladies who so kindly contributed to the musical programme of the evening.

The meeting closed with the singing of the National Anthem.

Convention Papers

SUPERVISION—WHAT AND HOW?

By Miss R. Rodgers, Winnipeg.

Supervision has for its ultimate aim the securing to children of the maximum aid in obtaining their education. It follows that the problem to be solved is how to influence the teachers that higher aims, better principles, and more effective methods will, wherever necessary, supersede those in present use.

The supervisor, in order to be ready for this task, must himself have clearly defined ideals as to the aims towards which the school should strive, and as clearly defined ideals as to the kind of instruction that will realize these aims. He should be a student of child psychology and be acquainted, not only with the history and philosophy of education, but also with the latest educational thought on psychology, pedagogy and methodology, that he may be able to fix more firmly or change, if necessary, his ideals, and be able to give a reason for the faith that is in him.

He must be progressive, ever reaching out for the truth, and not afraid to accept and act on it, when it is revealed to him.

“New occasions teach new duties,
Time makes ancient good uncouth,
They must upward still and onward,
Who would keep abreast of truth;
Lo, before us gleams her camp-fires!
We ourselves must pilgrims be,
Launch our Mayflower and steer boldly
Through the desperate winter sea,
Nor attempt the future's portal,
With the past's blood-rusted key.”

The amount of supervision required can only be determined by the needs of the teacher.

The exceptionally good teachers, whose ability and initiative are pronounced, need little supervision, though even these are helped by what one of them described as “an occasional jacking up.”

The supervisor, however, needs these teachers to keep up his ideal as to the possibilities of attainment, and also to try out original or new methods and help to decide on their merits.

The medium teachers, who, though not confident of their ability, and not strong in initiative, yet are ambitious to improve, and willing to accept and try out suggestions—these need more

frequent supervision, much encouragement and constructive criticism.

The poor teachers and the beginners are the supervisor's special problem and the real test of his ability. The fact that such large numbers of young teachers enter the profession every year is one of the reasons that makes the work of supervision so necessary. Among these a number are so deficient in discipline, or some other essential to success that, after continued supervision produces no appreciable improvement they should be dropped from the teaching force, and helped to find themselves in employment more suited to their abilities. It is impossible for a supervisor to continue responsible for the work of these teachers, and such responsibility should be lifted if they cannot be removed.

L. D. Harvey, of the Stout Institute, says: "A supervisor must have a consciousness of the fact that his duty is not to detect and get rid of poor teachers so much as it is to help poor teachers to become good teachers, and that if that is impossible, to get rid of them as easily as possible."

The remainder of this group, if the proper stimuli is applied, will develop into medium or excellent teachers, according to their native ability. These need more or less close supervision, kind and tactful but candid criticism, followed by constructive suggestion.

Watching the developing power of these teachers is the great reward that comes to the supervisor.

I have said frequent supervision, but let us remember we must not be continually distributing seeds or they will not grow, so when suggestions have been sown in the mind we must wait some time before we expect fruit. Personally, I think a visit of an hour once a month, or in some cases once in two weeks, is better than a five or six minute visit every day or so.

A visit should extend over the period of at least one recitation, this, I believe, is the custom of supervisors of special subjects.

We have said a supervisor's work is to make good teachers out of poor teachers. Now, we must ask what means are to be used.

1st. Observation of the teacher at work, to estimate her power in organizing material and presenting it interestingly and convincingly, to hear how her voice is used, to find out what kind of questions are given and what kind of answers are accepted, to observe her power to hold the whole class actively attentive—the shy, the weak, the lazy, as well as the eager and clever. Also to observe what industry and self-control are displayed, both by the pupils reciting and those occupied at their seats.

In short, to find what relations exist between the teacher and her pupils, what spirit pervades the room. For after all the greatest asset of a teacher is the ability to have self-control and initiative cultivated in her pupils without losing that co-operation which is necessary to successful work.

Criticisms, both commendatory and adverse, may be given on the work observed, followed, if necessary, by discussion with the teacher as to ways of improving her methods.

2nd. Giving model lessons before the teacher, that she may learn by observation. In all discussion of these lessons, emphasis to be laid on principles, not methods.

3rd. Conducting written and oral tests at intervals to determine if the assigned work, or a fair proportion of it, has been accomplished, and to help decision in the matter of promotion.

The result of these tests should be studied with a view to finding the causes of failure where they occur. Then the supervisor, in co-operation with the teacher, should devise means to overcome the difficulties.

4th. Recalcitrant and backward children should be studied individually by the supervisor and teacher, to, if possible, find a way to their hearts and minds.

If after repeated trials, much study, and great patience, it seems impossible

for such children to advance with their classmates, the supervisor should have power to remove such children to special classes where they will receive constant individual care, and be studied as to their possibilities.

5th. The supervisor will, if possible, hold conferences with his whole staff, with grade groups and with individual teachers. At these conferences the supervisor has an opportunity of presenting his ideals, and enlisting the cooperation of his teachers. Here the teachers should be free to express their views and be sure of a sympathetic hearing.

6th. It is the duty of the supervising department to decide what shall be taught, unless that has been decided by the Government Educational Department. On them also devolves the duty of seeing that each subject gets its fair proportion of time.

But as far as possible the method of presentation should be left to the individual teacher. Only when methods are wrong in principle or results are unsatisfactory, should a supervisor impose his methods on the teacher.

If syllabi are issued they should deal with suggested optional material rather than method, and if method is dealt with, several should be suggested. The supervisor should be able to direct the teachers to books and magazines that would be helpful, and should urge the necessity of professional reading. If the magazines and books are in the school office or library, it makes this work more effective.

With weak teachers it is often necessary to impose methods, but they should be encouraged to evolve new ones for themselves and try them out.

I remember reading an article on "The Art of Making Yourselves Useless." It is an art the supervisor needs, for the more unnecessary he becomes to his teachers, the greater his success. We often hear it said that the personality of the teacher is the most potent factor in the education of the child, and it is just as true that the personality of the supervisor is the most import-

ant factor in the education of the teachers. It is not necessary here to enumerate the special qualities a supervisor needs. Think over what we desire in teachers towards their pupils and you will know the qualities required in higher degree in the supervisor.

The teachers will not co-operate joyfully and willingly unless they have confidence in their leaders sympathetic understanding of their difficulties, unless they respect his erudition, ability and industry.

Paul H. Hanus, of Harvard, says:

"Personality won't count for much as a permanent asset, unless the supervisor is well equipped for his work by training and experience."

It is recognized as an axiom that the educationist must be able to inspire those he works among with a desire to excel. His personality must be pleasing and incite the desire of those under him to follow his leadership, but this power must be accompanied with the ability to work hard and steadily.

John Oxenham expresses it in the following lines:

"Inspiration is good, but with it alone
Life's prizes are not to be won;
Perspiration you'll need if you would
succeed
And get the world's work well done."

We have used the word supervisor freely to designate one appointed to oversee the educational work of a school, or a group of schools, but the question of who should do this work is one of present interest.

In towns or small cities where a superintendent is employed, he is expected, in conjunction with the principals, to do the supervision work, but if the number of teachers exceeds fifty or sixty, it becomes impossible for one person to give the necessary attention. In cities where there are large schools and principals are freed from teaching a class, this duty falls on them. They are the ones who, if adequately equipped, and truly interested, are in the best position to give close supervision. Even if part of their time must be given to administrative and clerical

duties, unless the school is unduly large, there is still time for a more thorough supervision than can possibly be given by anyone else.

The trouble with many supervisors, as with teachers, is inadequate preparation for their assigned task. I have struggled with this myself, both as a teacher and supervisor. One authority I read demanded as a preparation for supervision, experience in the country school, practical work in every grade, including primary and collegiate, and a special preparation beyond that given to teachers.

Alec. Murray, in his "Elementary School Standards," laments the seeming necessity for principals giving so much time to routine office work and trivial administration duties, and recommends that these duties be delegated to office helps, so that the principals may give their attention more fully to educational supervision, their really high office.

In Minneapolis, the senior commercial students in the collegiate do much of the office routine work in the schools, under the direction and supervision of a teacher from the collegiate. The principals have found this fairly satisfactory, but not so much so as permanent help.

In cities and towns where principals are not free, there are supervisors appointed to do educational supervision, and in many cities these also visit the schools where the principals are free. There is much to be said for this practice, for only by this means can there be any measure of unity. These supervisors, having a wider outlook than one school, are better able, often, to judge of the efficiency of the work. It is necessary that such general supervisors as well as those who are concerned with only one subject, should be able to work in harmonious conjunction with the principals.

In any system of schools, the supervising staff would be helped by conferences on educational topics, where the superintendent under whom they work

would from time to time meet them, and in this way have his ideals permeate the whole system, and make it not uniform but a unity.

In country schools, the problem is more difficult. Government inspectors are appointed, who visit the teachers once, twice or three times a year, as the case may be. Their duty demands a report to the Department of Education as to the success of each teacher, but could not be supposed to include such supervision as I have spoken of. Yet many of them, if not all, make an attempt to do at least some of this kind of work.

I remember my experience of inspectorial visits, during the first few years of my teaching experience; they certainly had no influence of my teaching ability. We must suppose that in the 20th century things are on a better footing, but even yet, the number of schools to be visited, and the amount of other duties to be fulfilled, practically precludes the Inspector of country schools being also a supervisor in the sense of being enough time with each teacher to really influence her educational methods, or even to give tests sufficient to find out what amount of work has been accomplished.

There is a movement on foot in the educational world that seems to promise a solution of this problem. Instead of each section having a school board, it is proposed to make the municipality the unit, and have a municipal school board. This is one of the subjects being dealt with by the Educational Bill now before the Alberta Legislature. It has also been brought to the attention of Saskatchewan by Dr. Foght, in his report of the survey of their schools recently completed.

Our own Minister of Education has also expressed himself as in favor of this method of school administration. Under these conditions, each municipality could have their own supervisor, who would report to the Municipal Board, and if inspectors were dispensed with, he would also report to the government.

The details of such an arrangement I do not feel competent to discuss, but surely the difficulties would not be insurmountable. It would be a great boon to our young teachers, the majority of whom begin their professional work in the country, to have some one coming to them frequently with help and advice.

I feel sure, too, it would result in better work being done for the pupils, many of whom lose a year because of

the incompetence or inexperience of a teacher who, with adequate help, could have succeeded better.

Let us never forget that we are engaged in a noble patriotic work, and count no cost too great to accomplish it successfully.

“Let us, then, be up and doing, with a heart for any fate,
Still achieving, still pursuing, learn to labor and to wait.”

WASTE IN EDUCATION

By A. White, Brandon

It seems particularly fitting just now to consider the subject of “Waste in Education.” The whole subject of waste is claiming such a big share of attention in connection with war conditions.

Conservation, saving, elimination of waste, as applied to food, coal, and other essential materials, with a growing realization of the need of applying the same principles to man power in all departments of life, are subjects of daily consideration. Human energy is in such demand that it must be conserved. To waste time and energy is almost a crime these days.

Even before the war, manufacturing and business efficiency and scientific management were commanding a lot of notice. Specialists were investigating the handling of pig-iron, the shovelling of ore, laying of bricks, etc., and were discovering that in the commonest of occupations it was possible to develop great increase of efficiency by the elimination of waste of physical energy. In our own special profession, educators have ceased to be satisfied with the somewhat haphazard methods of carrying out educational policies, and much has already been done in the way of investigation to find bases for more scientific tests of results, with a view to developing improved methods of organization, administration and teach-

ing. There can be no question in my mind that there is need for very much more of this. I fear we must acknowledge that in Education as in Theology there is a very strong tendency to be unduly conservative, to be controlled too much by tradition. Personally, I would like to see our M.E.A. take a much more aggressive attitude toward the investigation of outstanding educational questions. There are many problems needing thorough investigation, covering considerable periods of time and involving some expense, and many of them are to be found in the consideration of the topic that I am attempting to bring before you today.

I must confess I have been somewhat bewildered by the immensity of the problem involved, for “waste” involves the whole question of efficient work in our task of the education of children. However, I have attempted to briefly survey the field of work, indicate where many of the problems are, and I have tried to emphasize some that seem to me to fulfill the conditions of being extremely important and at the same time come within the range of our work as inspectors or supervisors.

May I briefly indicate in outline some of the directions in which we may with profit look for improvement by way of the elimination of waste?

1. The Programme of Studies in Relation to Waste. Let us get to fundamentals and consider briefly our Programme of Studies, in its relation to the developing life of our boys and girls. In the elementary school we are doing foundation work, and the great proportion of children never get beyond this. It is of vital importance that we do our work with the highest degree of efficiency. During six brief years of a child's life we are laying educational foundations. To do this efficiently without some undue waste of time and energy, we must have the best educational material available, material suited to the needs and capacities of children as they are maturing.

Without being unduly critical, one may honestly question whether our programme of studies reasonably meets these conditions. Is it the best Manitoba educators can devise? Is it in line with the most approved educational theory and practice? Is education as revealed in our programme keeping up with the rapidly changing social and industrial conditions of our modern life? No programme of studies can remain stationary. With new light on education, with changing conditions, our programme must change. I would like to feel that we as educationists are fully alive to the problem and that as an association we were facing the issue.

We might consider whether it is true of our programme what Ayres said of the Springfield Course: "Tests of the existing course show that it includes much material that is so artificial and unrelated to the needs of real life that it should be abandoned and more useful material substituted."

Or we might consider its merits on the basis of some of the results that we find. For instance, are we holding our pupils in the elementary schools? What proportion through lack of interest fail to complete the elementary course? Superintendent Elson says, with considerable truth: "The maladjustment of the work in the schools to the capacities and interests of children is ex-

pressed in terms of withdrawals, retardation, repetition and non-promotion." He very reasonably suggested in his own schools the need of:

1. A Revision of the Standard of Attainment.

2. Readjustment of the Course of Study.

3. Adaptation of the Course to the abilities of children.

Nor is he alone in his attitude to existing courses of study. James H. Van Sickle urges the need of greater elasticity in our programme when he says: "One of the conspicuous causes of waste is the attempt to give the same preparation to all regardless of wide differences and the character of the life to be led." Supt. G. M. Wilson is more severe on some parts of our modern programmes for he claims that "80 per cent. of the leaving of pupils between the ages of 14 and 16 are chargeable to the uninteresting, impractical type of work in the schools."

Turning now to our own programme of studies, an investigation of the requirements for particular subjects seems to me to bear out the suspicion that our programme is again in need of readjustment.

Arithmetic, for instance, still requires too much time to be spent on material that is not sufficiently profitable to make it worth while, e.g. L.C.M.; H.C.F.; compound addition, etc.

History as outlined in the programme is surely seriously defective. True, it is being dealt with and improvements will doubtless follow. The whole question, however, requires a very thorough investigation of children's needs, of correlation with other subjects, such as geography, and examination of available texts, before an adequate decision can be reached.

Spelling is a fruitful source of waste. Our text book is far from ideal. Indeed, any text book is to my mind a concession to poor teaching. The requirements for spelling throughout our course could be simplified and adjusted so as to secure improved results with

greatly reduced expenditure of time. Then we are constantly confronted with the criticisms from our teachers that our programme is too crowded. This needs more thorough investigation than it is getting.

2. The Teacher and Waste. Let us consider a new type of problem involving waste, centering round the teacher herself.

1. I might mention that most obvious one that you are all so familiar with, the waste due to the exceedingly short teaching life of so many of our teachers, and also the shortness of tenure, especially in rural schools.

2. Consider the waste due to the admission into the profession of many who are ill-adapted by disposition and training to do even reasonably effective work. Doubtless there is an intimate relation between this and the first mentioned cause.

3. Even with those that have fair natural capabilities there is much ineffectiveness through lack of an adequate vision of the real purpose of education and of the means of accomplishing that purpose. For instance, how almost universal it is to find teachers viewing their teaching in relation to the subject to be taught rather than in relation to the needs of the pupils who are supposedly being developed by means of the subject material.

4. There is serious loss, too, due to the lack of realization by teachers that every class is a social body, that cooperation, harmony, and a spirit of good fellowship are essential to the highest results. There is still too much of the unreasonable, autocratic "because I say so" kind of government. Immediately associated with this is the persistence of the retributive idea in punishment.

These and many other problems are Normal School problems primarily, since they have to do with the personal outlook and efficiency of teachers. It would be exceedingly profitable, however, for men on the field, who come in contact with the actual work of teach-

ers, to investigate specific questions such as these with a view to eliminating not only waste of the time of pupils, but some waste of time in Normal Schools, by securing readjustment of the emphasis. There is surely enough of the true spirit of co-operation between our Normal men and our men on the field to secure and welcome this.

3. Waste Through Defective Teaching. In the actual process of teaching there is undoubtedly much waste of time and effort through defective methods.

1. Defective methods usually grow out of a failure to grip essential principles. For example, how few teachers show in practice a true appreciation of the fundamental value of "Interest in education?" One phase of this motivation of school work has, so far as I know, received comparatively little consideration amongst our teachers, yet it is taking quite a prominent place in the attention of educationists to the south of us.

2. In methods, the influence of tradition is very strong. Initiative in devising improved methods is not prominent. Most wasteful methods are common. Spelling is a case in point, as an editorial in the March number of "The School" says: "The time of good spellers is being wasted on words already known, while the poor and hopeless blunder on through a terrifying maze of words familiar and otherwise."

Sarah E. Chase points out the waste that occurs through lack of a uniform method for some of the number operations, and instanced a case where in one building "interest" was being taught in eight ways. This may be an extreme case, but it points to a problem worthy of consideration. Ayers instanced a case of waste through poor methods in penmanship. In one school children could copy simple written matter at the rate of 5 words per minute, in another school children of the same grade could copy words in as high a quality of penmanship at 20 words per minute.

3. Waste may easily occur in unexpected directions by placing undue emphasis on a special subject. An exceptionally high degree of accuracy may perhaps be obtained in the fundamental operations in arithmetic or in spelling, yet this may be obtained at an expenditure of time and effort that is excessive and wasteful. This is a case somewhat similar to the speed of an ocean liner, there is a maximum speed for true efficiency, anything beyond that requires an excessive expenditure of fuel.

4. Dewey points out the waste due to "daily repetition of drill in rudiments which have been previously mastered."

5. Is there not also a very considerable waste especially in our upper grades from failure to take time to train children how to study? Entrance and High School children waste an appalling amount of time in unprofitable homework through lack of knowing how.

I have instanced only a few of the many examples that might be mentioned of waste through defective methods.

4. Waste Through Imperfect Organization. There are also Problems of Organization in relation to waste. Some are more applicable to town and city schools, others to all schools alike.

1. I might mention the problem of the most effective system of promotions and grading with a view to eliminating so far as possible waste of a child's school life. There is undoubtedly waste in what is called the "lock step" system of promotions.

As Van Sickle says: "Individual pupils must be watched, so that they may be promoted individually at any time without waiting for fixed promotion dates."

2. There is waste due to the presence of sub-normal and super-normal children in a class of normal children.

3. There is the question of the size of classes in relation to economy viewed both educationally and financially. Many experts contend that from

30 to 35 children per class is more profitable in every way than classes from 40 to 45. In practice we don't agree in Manitoba.

4. There is a serious problem growing out of poor organization of subject matter to be taught. In this connection I would like to draw attention to what seems a serious weakness resulting in serious loss of valuable time. As you doubtless realize, our programme of studies outlines in the barest possible way the work required during the year in each subject, giving in many cases little more than the number of pages required from the text book. I am becoming more and more convinced that for more than 75 per cent. of the teachers, this is not a sufficiently full outline, if good work is to be expected. Our best teachers can take a large view of a subject and prepare for themselves a syllabus that will be a guide to the year's work. The majority, however, are, by lack of training and experience, incapable of doing this efficiently even if they see the need. As a result, we find the year's work in many cases very imperfectly organized or not organized at all. Many feel their way through a term's work not knowing how much they should have accomplished or how much more there is to accomplish. They have not seen the work in large units, hence they could not relate the individual lesson to the larger purpose.

5. Intimately associated with the last problem is the one of the relative value of subjects on the time-table and the disposition of the time available to the best advantage. I am inclined to agree in some measure with Supt. C. C. Hughes of Sacramento, Cal., when he says: "A weakness of many schools . . . is the failure to establish relative values among different subjects. Each subject has its comparative importance. In a large graded system it cannot be left to the individual teacher to determine the amount of time given to the various subjects, it in no way affects her individuality if the time given is fixed for her."

6. Mention might be made of the waste due to lack of organization that would avoid the worst evils of transfer from one school system to another.

These are only a few of the problems in organization. Others such as organization of classes for mentally deficient, for anaemic children, and special vacation classes, all have an important bearing on the question of waste in our school systems.

5. Conditions involving particularly waste of Time. Still another cause of waste grows out of the imperfect use of the school life of children. Is the time available used to the best advantage, or are we guilty of a serious waste?

1. There is the question of the length of the school day. Have we the best possible for all grades. Should grade III have as long hours as grade VIII? Might it be true economy to add 30 to 45 minutes per day to the upper grades for supervised study and abandon entirely the giving of homework?

2. Is the 200 day year, with the present distribution of holidays, the best that can be devised in the best interests of the children? Would you agree with the statement of Supt. John H. Frances, one of the most progressive superintendents in America, when he says: "The greatest source of waste and danger in this nation today is the three and four months of the year when the boys and girls of the country dissipate their energies in what is called a summer vacation. No business house in the country can afford to remain idle three months of the year. No more can the schools. It is robbing them of their efficiency. After the war is over, if you and I do our duty, we will open schools every day, so that boys and girls may enter them who have nothing constructive to do."

3. There is, too, the perennial problem of irregular attendance. As Ayres says: "Irregular attendance is the greatest factor of all in wasting time."

4. Closely related to this and probably the next most important factor in

wasting time is the rate of promotion and its resultant retardation. Again Ayres points out that from 1-10 to 1-8 **of all money spent in education is spent in taking children over work a second time.**

6. Waste through low vitality and ill-health. I cannot refrain from touching on the waste due to ill-health and the problems it presents to every educationist.

1. Do we give play its full value and rightful place in our scheme of education?

2. Do we even value to their utmost hygienic conditions in the school room?

3. Do we so carry on our educational work that it is apparent how much we prize good health and a sound body?

In this connection what would our attitude be to a proposition such as the following by Ernest Hermann, a Physical Director: "Six, seven and eight-year-old children should have half-hour periods of directed and spontaneous activities. The periods should alternate indoors and outdoors. From there on throughout the grammar grades the child should have at least 20 minutes in every 60 devoted to wholesome outdoor, physical recreation." He continues:—"Nothing can possibly be as beneficial as an outdoor period of fifteen or twenty minutes every hour with the opportunity for actual relaxation, perfect change of environment and its vigorous and spontaneous physical actions and the mental tonic which comes from wholesome children's play."

I would not suggest even that we accept all such statements neither should we ignore responsible opinions. We have very much to learn about this and a hundred other things connected with our great work of education.

The British and U. S. Governments in their desperate need are testing out hundreds of devices for combatting the submarine menace. The majority they discard, some few they use. They regard each on its merits. We should have an equally open mind of all sug-

gested improvements in our work of combatting ignorance and be ready to use any that may have merit.

In thus presenting a brief survey of an immense field, I cannot pretend to have exhausted all the avenues of waste. I hope, however, I have been able to present enough real, timely problems to challenge your attention. As I suggested earlier in my paper an association such as the M.E.A. might reasonably be expected to grapple with such problems. Many of them, if they

are to be adequately studied will demand time extending over a considerable period and involving some expense. Our educationists might reasonably be called upon to give some time every year to the investigation of such problems even to the extent of spending a few days in committee work at some central point. Only in this way can we hope to meet adequately the situations that are constantly arising and which in the highest interests of our work demand attention.

UTILITARIAN ALGEBRA

By J. G. Johannsson, Oak River

(Abstract)

"Elementary mathematics requires nothing but the plainest common sense, and the story of the special brains needed for mathematics, as far as elementary work is concerned, is a myth." —Schultz: "Teaching of Secondary Mathematics," p. 24.

One of the common arguments advanced against the teaching of Algebra is that the subject has such a very small practical value (if any) to the majority of pupils who study it. Mathematicians do not claim that algebra—or mathematics in general—is taught because of its utilities alone. The only subject on the curriculum which may be safely said to be taught for its practical or bread and butter value, is English. Yet if it were asked what subject came next in importance to English in this respect, the answer would undoubtedly be—mathematics. Seventy years ago, Herbert Spencer declared that the knowledge of science was the knowledge of most worth. In a recent issue of "Current Opinion," President Elliott of Harvard, is quoted as saying that the present world war has demonstrated beyond the shadow of a doubt that Spencer's answer is correct. Science, which lies at the foundation of modern industrial development, will unquestionably occupy in the future a more prominent place on

the school curricula than it does at present.

A knowledge of mathematics is indispensable to the student of science. For not one of the sciences can dispense with mathematics, though astronomy and physics, as the most exact sciences, are the best illustrations of the usefulness of mathematics. Moreover, the mathematics, of such importance in science, rest upon the operations of elementary algebra. Therefore, if it be argued that algebra is of no subsequent profitable value to the individual, still it should be studied, for it has a value for society if not for the individual. The individual should know something about engineering feats and scientific discoveries, and in acquiring such information, algebra is of great importance.

In looking over the plan for the proposed retirement fund for Manitoba teachers, we observe that the amount of the yearly pension is given by the algebraic expression $a + b \div 100$ of $\$ (x + 300)$; where "a" is the number of full years served in the province; "b" is the number of full years' contributions made to the fund, and "x" is the average salary during the last ten years of service.

We realize at once that a great deal is expressed by the formula in a sim-

ple, concise and unequivocal way. If we write the formula in words we shall require a generous amount of space before we succeed in making the meaning clear.

This use of letters not only for words but to express the substance of long sentences, is one of the most important utilities of algebra. Due to new inventions like the automobile, our general reading shows a marked increase in the use of technical phrases. More particularly has this increase been marked since the war broke out. Popular science and technical magazines, which are read by thousands, generally employ symbols in description. Attempts at description without the use of symbols is always apt to be clumsy, and sometimes even ludicrous. This part of algebra, so well adapted for making concise statements of a numerical kind, is useful in nearly all trades.

The next topic in algebra which has great vocational value is the linear equation. Useful problems are very often of such a character that a solution without the help of Algebra would be a matter of great difficulty if at all possible. The solution of problems in mensuration, interest and percentages generally is much facilitated by employing the simple equation. At this stage it may be proper to remark that it seems a pity that algebra and arithmetic are kept so far apart on the curriculum. Moreover, the present day tendency seems to be to discourage the use of algebra in the solution of arithmetic problems. The number of hours employed by the pupils in solving arithmetic problems, or attempting to solve them, might be considerably reduced if the student were made acquainted with the algebraic equation and encouraged to use it. As a matter of fact the handbooks to arithmetic texts make liberal use of algebra in gaining the solutions to the more difficult problems in the text. The student is not likely to benefit much by the solution if he has not learned to use the equation.

Graphs, which interest all students, and are also easily understood, have an important vocational value. Their avocational value is probably just as great, for graphic representations are so commonly and widely used in papers, magazines, etc., that some amount of familiarity with them is necessary to the average person. The significance of statistics presented in graphical form rather than the tabular, is much more readily appreciated, and various facts are thus brought out which might, and probably would, otherwise be unnoticed. Students of chemistry, physics, meteorology, economics, etc., all make extensive use of the graph. Various problems are more easily solved by the graphical than by any other method.

Proportion and variation is a topic which may be ranked with these others in its vocational utility. Logarithms have an immense economic utility, lightening as they do the labor of computation in the sciences, trades, navigation and engineering. Factoring helps to simplify computations both in algebra and arithmetic. A knowledge of this topic frequently makes the necessity of performing long and laborious multiplications.

The potential utility of algebra is much greater than its vocational or avocational utility. This is due to the fact that the subject furnishes the necessary foundation for various professions, such as engineering, accountancy, etc.

The following paragraph quoted from "School Science and Mathematics" for May, 1916, page 430, sets forth clearly and forcefully the practical value of algebra.

"I take it that you consider wireless telegraphy to be practical, but in its development, the theory and exponents bore just as large a share as steel, brass or glass. Look over Lord Kelvin's laying of the Atlantic cable, and after having your ship and your wire and your gutta-percha, tell me how you would do it without complex fractions.

Gather together wire, cloth, gasoline, steel and wood to make an aeroplane, and where would you be if you had no radicals? Look over the plans of the Diesel gas engine, and think how long Diesel would have experimented if there had been no such thing as proportion. We are just now in a stage of advancement in long distance telephony, due to the work of Professor Pupin. Look over his work and estimate if you can the money value of factoring. What might happen to a steel bridge if the designer had said that $\sqrt{a^2+b^2}$ equals $a+b$? Ask the electrical engineer whether he would rather see a rise in the price of copper or a sudden disappearance of the complex number. What insurance investigation would cause such consternation as a discovery that the commutative law no longer held?"

"To mention subjects like insurance, returns on investments, annuities, and similar considerations is to justify the need of the third kind of mathematics mentioned above, namely, the higher arithmetic and algebra or the study of the properties of number as such. Today the business man refers all such matters to the specialist, and his mental attitude toward them is the same as that of the average housekeeper to the plumbing of her home; and that is but one stage above the attitude of the savage in the presence of a thunderstorm. In other words, while the business man or the housekeeper may be an educated man or woman, neither he nor she is capable of an educated attitude toward work unless work is fully understood." —Thirteenth Year-Book of the National Society for the Study of Education, page 28.

Why is there so much dissatisfaction with algebra? It is certainly not due to the lack of disciplinary, cultural or practical value on the part of the subject. It has these in just as full a measure as the other subjects on the curriculum. The criticism we hear is not of the constructive variety, and this leads one to think that the critics themselves do not know what they want. They

just imagine they have some grievance against algebra. Instead of thus urging, on insufficient and flimsy grounds, the removal of the subject, they could with good reasons insist on a re-organization of the subject matter and improvements in both teaching and examining.

A number of the intricate and complex problems met with in the elementary texts might be eliminated with advantage. Some of the topics now generally taken might also be passed by. Students, for instance, are asked to reduce fractions whose terms are of the third, fourth, or even higher degree, by the method of finding the H.C.F. Yet no practical examples lead to such fractions. Complicated complex fractions and different simultaneous quadratics might also be dispensed with.

"Exercises which have no value other than 'as drill for drill's sake' are of doubtful utility. The subject will suffer no serious loss from the omission of complicated processes that are not likely to occur again either in future mathematics or in the physical sciences.

The **processes** of algebra are not ends in themselves; they are tools needed in the accomplishment of the work of algebra, which is to solve problems; the problems may arise in mathematics itself, in the natural sciences, in technological work, or in everyday life. One who omits from his algebra all processes not needed in any such problems will never feel the loss. — Young, "Teaching of Mathematics," p. 303.

"Moreover, there is so much purely formal work in algebra that its reduction by one-third or one-half will not sensibly diminish the educational benefits that may be derived from it." — Schultz's "Teaching of Secondary Mathematics," p. 293.

By doing away with these unnecessary problems and topics the subject would become much more useful and intelligible to the students.

The examination papers in secondary algebra contain, as a rule, altogether too many of these complicated and useless problems. Many of them,

in fact, have all the ear-marks of puzzles invented for examination purposes only—as if the puzzles in the text were not extreme enough. The question naturally suggests itself—is this because the examiners feel that the parts of the subject, which are of real practical value, are so easily understood that no average student could fail to master them; and that they must therefore invent and select worse than useless conundrums for no other purpose than to make the examination difficult for the student? The method of examining is undoubtedly responsible for a

comparatively large part of the yearly failures. Young gives several examples of these difficult problems, and he is careful to state that “these are no exaggerations” — that such problems may really be met with on examination papers. After looking over these problems and after reading what several other mathematicians had to say on the point, I looked over the Grade XI examination papers in algebra for the four years 1914-1917 and (Unfortunately the remainder of this paper was lost in transmission. Can examiners and teachers infer the rest of the sentence?)

MATHEMATICS IN OUR SECONDARY SCHOOLS, THEIR VALUE AND OUR METHODS OF TEACHING

(L. A. H. Warren, University of Manitoba)

When I was asked a few weeks ago to give a paper on this subject, I gladly accepted the invitation, despite the fact that I had apparently no spare time in which to prepare my remarks; first, because I am in hearty sympathy with the objects of this Association, and secondly, because of the opportunity thus afforded of saying a few words on a subject which I deem of fundamental importance, and the more so at this time, when a great many people view educational questions from the standpoint of practical utility to the almost entire exclusion of all other points of view.

Before a competent jury, few undertakings could be more stimulating than to defend mathematics from a charge of being unworthy to occupy in the hierarchy of arts and sciences, the high place to which, from the earliest times, the judgment of men has assigned it. However, no such accusation has been brought against the study of mathematics, or at least, brought by persons of such scientific qualifications as to give their opinions weight enough to call for serious consideration. Mathematics has often been praised by the scientifically incompetent. I do not

know that it has ever been dispraised, or its worth challenged or denied by the scientifically competent.

The age-long immunity of mathematics from serious criticism, and the high estimation in which the science has been almost universally held in enlightened times and places, give it a position nearly, if not altogether, unique in the history of criticism. It might have been better otherwise; for most mathematicians have a sense of security to which, perhaps, they are not entitled in this critical age.

It is quite conceivable that it would have been to the advantage of mathematics—and the same thing applies to science in general, and to philosophy—if in the course of the centuries, mathematicians had been compelled now and then, by the adverse criticism of their science, to discover and to present to themselves and to their fellowmen, the deeper justification, if there is such, of the world's approval of their work. Let us ask just what is its purpose and ideal. In what way does it contribute to the beauty of human existence; what are the rightful claims of the science to human regard?

It is not my intention to dwell upon

the nature of mathematical knowledge, but in a word I will give what I consider its most essential features, in many of which it differs from other kinds of knowledge. The essential features of mathematical knowledge consist in the simplicity and self-evidence of its fundamental concepts, the precision with which its terms are defined, the logical rigor of its demonstrations, its conservative attitude towards old truths and theories, the aid it affords in obtaining new knowledge, and its almost entire independence of other knowledge.

The phrase "mathematically certain and unequivocal" is often heard in the sciences, and in common life, to express the idea that the seal of truth is more deeply imprinted on a proposition than in the case with ordinary acts of knowledge, and to imply that mathematical reasoning excels all other in accuracy and soundness. Why is this? I think you will see the reason why very clearly as I proceed with my remarks.

The Value of the Study of Mathematics

Let us ask ourselves what are the special advantages derived from the study of mathematics, considered both as a discipline for the mind and as a key to the attainment of other sciences.

As a key to the attainment of other sciences, mechanics, astronomy, physics, chemistry, geology, biology and engineering, the use of mathematics is too well-known to make it necessary to dwell long on this topic. The moment a science has advanced far enough to admit of the mathematical formulation of its problems, mathematics has not been slow to place itself at the service of that science to the mutual benefit of both.

Let us, therefore, view the study of mathematics from the standpoint of a discipline for the mind. A good reasoner is not the work of nature alone; the experience of every day makes it evident that education develops faculties which would otherwise never have manifested their existence. It is, therefore, as necessary to learn to reason be-

fore we can expect to be able to reason well, as it is to learn to swim or paint in order to attain either of these arts. Now, something must be reasoned about; it matters not much what it is, provided that it can be reasoned upon with certainty. The properties of mind or matter, or the study of languages, mathematics, natural history—any of these may be chosen for this purpose. But it is very desirable to choose the one which admits of the reasoning being verified; that is, in which we find out by other means, such as direct measurement and ocular demonstrations of all sorts, whether the results are true or not. When the guiding property of the magnet (the compass) was first ascertained and it was necessary to learn how to use this new discovery, and to find out how far it might be relied on, it was thought advisable to make many passages between ports that were well known before attempting a voyage of discovery. So it is with our reasoning faculties; it is desirable that their powers should be exerted upon objects of such a nature that we can tell by other means whether the results which we obtain are true or false, and this, before it is entirely safe to trust to our reason. Now, the mathematics are particularly adapted for this purpose on the following grounds:—

(1) Every term capable of definition is distinctly explained, and has but one meaning, and it is seldom that two words are employed to mean the same thing.

(2) The first principles are self-evident, and though derived from observation, do not require a wider range of observation than has been made by every rational person.

(3) The demonstration is strictly logical, taking nothing for granted except the self-evident first principles, resting nothing on probability, and is entirely independent of authority and opinion.

(4) When the conclusion is attained by reasoning, its truth or falsehood can be ascertained, in geometry by actual

measurement, in algebra by common arithmetical calculation. This gives confidence to the reasoner, and in the early stages of the development of his reasoning powers is absolutely necessary.

(5) There are no words used whose meanings are so much alike that the ideas which they stand for may be confounded. Between the meaning of terms there is no distinction other than a total distinction, and all adjectives and adverbs expressing difference of degrees are carefully avoided. Thus it may be necessary to say "A is greater than B," but it is entirely unimportant whether "A" is very little or very much greater than "B," and any proposition which includes this assertion will prove, its conclusion generally, that is, for all cases in which "A" is greater than "B," whether the difference be great or little.

I repeat, that the real advantages of mathematical reasoning consist in the actual certainty we possess of the truth of the facts on which the whole is based, and the possibility of verifying every result by actual measurement or calculation, and not in any superiority which the method of mathematical reasoning possesses. By way of comparison from another field, suppose this point to be raised, "Was the assassination of Caesar justifiable or not?"—the actors of the deed justified themselves by saying that a tyrant and usurper, who meditated the destruction of his country's liberty, made it the duty of every citizen to put him to death, and that Caesar was a tyrant and usurper, therefore, and so on. Their reasoning was perfectly correct, but proceeded on premises, then extensively, and now, universally, denied. The first premise, though correctly used in this reasoning, is now asserted to be false, on the ground that it is the duty of every citizen to do nothing which would, were the practice universal, militate against the general happiness; that were each individual to act upon his own judgment, instead of leaving offenders to the law, the result would

be complete anarchy. Witness Russia today!

Now the point I wish to make is, that in these reasonings and all others with the exception of those which occur in mathematics, it must be observed that there are no premises so certain as never to have been denied, no first principles to which the same degree of evidence is attached as to the following that "no two straight lines can enclose a space" or that "the whole is greater than its part." In mathematics we reason on certainties, on notions to which the name of innate can be applied if it can be applied anywhere. Here there is no party spirit, no personal controversy, no compromise, no balancing of probabilities, no painful misgiving lest what seems true today may prove to be false tomorrow. Here, at least, the student moves from step to step, from premise to inference, from the known to the hitherto unknown, from antecedent to consequent with a firm and assured tread; knowing well that he is in the presence of the highest certitude of which the human intelligence is capable. Hence, there is, perhaps, not a single department of human inquiry so well calculated to develop the reasoning powers and to impart those habits of cautious and continuous investigation so necessary to insure success in every intellectual and industrial undertaking of difficulty or importance. By mathematical study the judgment is rendered more discriminating; the capacity for close attention and continuous thinking, more enlarged; the ability to distinguish argument from sophistry, evidence from assumption, is strengthened; and above all, the mind is imbued with an ardent and uncompromising love of truth.

Plato wrote over the portal of his school, "Let no one ignorant of geometry enter here"; and almost every university today imposes a similar condition for entrance. Plato did not mean that questions relating to lines and surfaces would be discussed by him and his pupils. On the contrary, the topics to which he directed their atten-

tion were some of the deepest problems—social, political, moral—on which the mind of man could exercise itself. Plato and his followers tried to think out together conclusions respecting the being, the duty, the destiny of man, and the relation in which he stood to the unseen world. What had geometry to do with these things? Simply this—that a man whose mind had not undergone a rigorous training in systematic thinking, and in the art of drawing legitimate inferences from premises, was unfit to enter upon the discussion of these high topics; and that the sort of logical discipline that he needed was most likely to be obtained from the study of geometry—the only mathematical science, which in Plato's time had been formulated and reduced to a system. And today we act upon the same principle. Our future lawyers, clergy, statesmen and financiers, are expected at the High School and the University, to learn a good deal about curves, and angles, and numbers and proportions; not because these subjects have direct relation on the needs of their lives, but because in the very act of learning them, they are likely to acquire that habit of steadfast and accurate thinking which is indispensable to success in all pursuits of life.

In the closing remarks of his address to the London Mathematical Society, when he was retiring from the President's chair, Professor Henry Smith used the following words: "I should not wish to use words which may seem to reach too far, but I often find the conviction forced upon me that the increase of mathematical knowledge is a necessary condition for the improvement of science, and if so, a no less necessary condition for the improvement of mankind. I could not augur well for the enduring intellectual strength of any nation of men whose education was not based on the solid foundation of mathematical learning and whose notions of the world and the things in it, were not braced and girt together with a strong framework of

mathematical reasoning. It is something for men to learn what proof is and what it is not, and I do not know where this lesson can be better learned than in the schools of a science which has never had to take one footstep backward, which has never asserted without proof or retracted a proved assertion; a science, while ever advancing with human civilization, is as unchangeable in its principles as human reason; the same at all times and in all places; so that the work done at Alexandria and Syracuse two thousand years ago (whatever may have been added to it since) is as perfect in its kind, as direct and unerring in its appeal to our intelligence as if it had been done yesterday at one of our great universities by one of our leading mathematicians. Perhaps also it might not be impossible to show, and even from instances within our own time, that a decline in the mathematical productiveness of a people implies a decline in intellectual force along the whole line; and it might not be absurd to contend, that on this ground, the maintenance of a high standard of mathematical attainment among the scientific men of a country is an object of almost national concern."

Not only has the study of mathematics special advantages as a discipline to the mind, especially for younger pupils, but its study has a great utilitarian value, and for this reason should appeal to the severely practical of our day. In the case of arithmetic, a minimum knowledge is absolutely essential to the conduct of life. We must all be able to use money, to keep our simple accounts, and so on. Everyone should know what "interest" is, and how it is computed; if for no other reason than the encouragement of thrift. Moreover, in these days and in the days to come, when women are to replace men in banks, on teaching staffs, on civic and administration boards, it is essential that all should be able to enter intelligently into the various aspects of community and public life, and there is no better preparation for such

than a good sound training in the elements of mathematics.

One writer has said, "That mathematics even in its purest and most abstract estate is not detached from life. It is just the ideal handling of the problems of life; as sculpture may idealize a human figure or poetry or painting may idealize a scene, mathematics is precisely the ideal handling of the problems of life; and the central ideas of the science, the great concepts about which its stately doctrines have been built up, are precisely the chief ideas with which life must always deal, and which give it its interests, and problems, and its order and rationality" (Keyser).

Dr. J. A. McLellan, formerly principal of the School of Pedagogy at Hamilton, and Dr. J. Dewey, professor of Philosophy in the University of Chicago, in their book on "The Psychology of Numbers," say, in speaking of mathematics, "Even upon its merely formal side, a study which requires exactitude, continuity, patience, which automatically rejects all falsification of data, all slovenly manipulation, which sets up a controlling standard of balance at every point, can hardly be condemned as lacking in the ethical element. Moreover, number is the tool whereby modern society in its vast and intricate processes of exchange, introduces system, balance, and economy into those relationships upon which our daily life depend. Properly conceived and presented, neither geography nor history is a more effective mode of bringing home to the pupil the realities of the social life in which he lives, than his arithmetic."

We often hear it said today that there are many in our schools who do not like mathematics and who find it hard, (there are many in our schools, and many who have left our schools, who do not like anything that is hard, anything which requires an effort)—and these men go on to say, pupils should not be asked to work at what they do not like. Unless their whole heart is in the work they derive very

little, some say no benefit from its study. This idea is not a twentieth century discovery. Shakespeare expressed the same idea in "The Taming of the Shrew," Act I, Scene I, when he said

"No profit grows where is no pleasure ta'en;

In brief, sir, study what you most affect."

As much as I admire Shakespeare, I cannot agree with him here, nor with those who advocate a similar policy today, for children of secondary school age. Life is hard work; and if children have never learned in school to give their concentrated attention to that which does not appeal to them and which does not interest them immediately, they have missed one of the most valuable lessons of their school years. It is surely by having to concentrate all our powers on something that we gain strength, that we develop our powers of reasoning and prepare our minds for still greater efforts.

Is it not true that some lines of work in our schools are simply play, and rightly so. The old adage is very true, "All work and no play makes Jack a dull boy." But should all work be play? Some people think so. I do not. In an address recently, Mr. Ira Stratton, official school organizer for our Province, who has done a splendid work during the past two years, for the non-English children of Manitoba, stated that: "These children progress more rapidly in their work than our English children, and why? Because," he said, "they have not learned the gentle art of being entertained. They go to school to learn," and they do learn very quickly. Far be it from me to say that the school work should not be made interesting to the pupils. It should by all means be made just as interesting as possible, but isn't there a real danger of carrying this side of our school programme too far? Is it a sufficient reason to discard a subject from a child's programme because it requires concentrated thinking and attention and a real effort on the pupil's

part? Should our children grow up with the idea that "Life is just one sweet dream after another," and that all one has to do in life is to say, "This thing is hard," or "I don't like it," and some benevolent power will quickly remove it from their path. Would it not be better if our children learned something of the reality of life by learning in their school days, that "There is no royal road to learning?"

Our Methods of Teaching

Some time ago, I read a lecture given by Prof. Perry of London, England, before the British Association meeting in Glasgow, 1901, in which, among other things, he advocated the dropping of many things from the orthodox elements of Euclid, in order to let the student "get somewhere" more quickly. Let me point out that at that time in England, and in some English schools today, nothing but the orthodox order and method of Euclid's propositions, was accepted. I am thankful that we have, some time since, broken these fetters, and have had sense enough to realize that there are other orders and methods equally good and logical. We have made some progress in our methods of teaching geometry, but do we not still teach algebra almost as it was taught two or three centuries ago? Further, we teach both algebra and geometry in water-tight compartments, so to speak. To my mind, this is the greatest weakness in our course of elementary mathematics today.

In my high-school days I was obliged to spend considerable time in learning the purely geometrical proofs of the propositions in the second book of Euclid, and I can assure you that they did not impress me very favorably at that time. The algebraic proofs given as notes at the end of each proposition, were simply illustrations of how those results could be obtained more briefly and more simply, but they could not be accepted as proofs for examination purposes. Why compel a pupil to spend a lot of time mastering a geometrical proof when an algebraic proof is so much simpler? I believe, however,

that in such cases the result should be illustrated geometrically whenever possible.

On the other hand, let me assure you I have no sympathy for those who make the course in geometry little more than a mongrel course in drawing and measuring, and who insist that they are progressive, and that the champions of real geometry are reactionary. Would not a course on correlated mathematics, combining algebra and geometry, overcome many of our difficulties? We could then give a subject a geometric or algebraic treatment, or both, or one semi-geometric and semi-algebraic, as we thought best adapted to it. In this way I am sure we could make both geometry and algebra more interesting to the pupil. We could cover more ground in the same time and still do it well, and we would have an opportunity to introduce the pupils to some interesting applications of mathematics. Might we not, in this way, make our course of more service to the man who is going to use his mathematics in the study of pure and applied science? In these days, every man ought to study natural science, and we know that his study is greatly hampered by lack of sufficient knowledge of mathematics. And it is not only mathematical knowledge that the scientist requires, but mathematical methods. To me, and I think I can safely say to all men who do not love mathematics for its own sake alone, to me, mathematics is a powerful key with which to unlock the mysteries of nature. And what about the demand for such after this war? What a pity we had not realized this twenty years ago. Perhaps we teachers of mathematics are to blame, that through our conservatism in our methods of teaching and what we teach, we have not long ago put into the hands of our scientists in their secondary and college education such and sufficient mathematics that they might be able to cope much more effectively than they have been able to do with the host of problems that have been and are still confronting them.

As there is no real study of the natural sciences which is not quantitative, it must be through mathematics.

You may think that what I have said refers to the more advanced mathematics, but a good beginning may be made in this direction in secondary school mathematics. I firmly believe in the early direction of practical applications of mathematics. Soon after the pupil has any knowledge at all, he should be encouraged to apply it to practical problems. Frequently a pupil gets a distaste for the study because he is reasoning about purely abstract things. Let me give you an illustration from my own experience in teaching analytical geometry to a class of college students. In studying the curve known as the parabola, we have a number of theories, one of which may be stated thus: "The diameter and focal radius drawn from any point on a parabola makes equal angles with the normal at that point." Few, if any, of the standard text-books on analytical geometry place special emphasis on this theorem. In fact, Baker's geometry does not do this important theorem the honor of stating it in such a form, but gives the same result in another form, in which, to my knowledge, it has no practical application. What an added interest one's pupils show in such a theory when they learn that this is the principle on which all parabolic reflectors work, that this explains the use of the parabolic reflectors in automobile lamps, street car or locomotive headlights, great searchlights; and by no means least, the use of large parabolic mirrors in the powerful reflecting telescopes now being used by astronomers, and of which we have the second largest in the world in Vancouver Island, B.C. Would not a course in analytical geometry be much more interesting to the students, even to the bright mathematical students who love pure reasoning, if some simple applications of important theorems were inserted in the text-book. Of course, a good teacher of mathematics, with a full knowledge of his subject and its appli-

cation, will mention and explain such himself; but it would be a reminder to him and a very great help to the teacher of mathematics who is such by fate rather than by choice, if he or she had such to guide him.

Let me just mention here, that I feel very keenly that our elementary and secondary mathematics should be taught by people who know a good deal about its broader features and its applications and have some enthusiasm for them. Every school teacher knows the beginnings of mathematics after a fashion, but it is a great mistake to have people who know no more than this, try to teach what they know, and this is what is happening every day in our schools. Sir Oliver Lodge said, "I am not acquainted with any other subject where a wide knowledge on the part of the teacher is equally important; because without it, the subject is dull and depressing, whereas with it the subject can be made to bristle with life and interest and illustration. It is like the difference to a child between a school book and a colored picture book. In all probability a large proportion of children, if properly taught, would like mathematics and proceed in it a very considerable distance instead of hating it and becoming blocked at the threshold." But even in its so-called poorly taught condition among us, I do not believe that the percentage of pupils in the secondary schools or the first year of the university, who dislike mathematics, is by any means as large as some educationalists try to make the country believe. Personally, I do not find any pronounced dislike to the subject in my first year classes, which are at present composed largely of girls; and the death rate as measured by examinations, is not unusually high when compared with other subjects. I do not think, however, that we as teachers, should rest on our laurels. If there is a better way of presenting our subject, let us find it out as quickly as possible.

Dr. David E. Smith, of the Teachers' College, Columbia University, in speaking of the position of mathematics in

our schools, says: "It does not seem to be mathematics itself that is challenged so much as the way that it has been presented to the youth in our schools, and to most of us the challenge seems justified. With all the excellence of Euclid, his work is not for the child, and with all the value of formal algebra, the science needs some other introduction than the arid one until recently accorded to it."

I have spent sometime recently in reviewing the course on correlated mathematics for the first three years of the high school course, written by E. R.

Breslich, of the University of Chicago High School, and I think he is on the right track. I would not recommend that we should at once discard our present system and adopt his, but I would like to see his course given a good trial in one or more of our schools. I feel that those of us who are deeply interested in the teaching of mathematics should make a thorough investigation of this new method of teaching mathematics, and if we feel that it is an improvement over our present method, take steps for its adoption in our schools.

THE TEACHER AND SALARY QUESTION

In recent issues of the Western School Journal the salary question has been approached from different angles.

It has occurred to the writer that a general survey of the salaries paid to the teachers of Manitoba might be of assistance to those who seek a solution of one or more of the problems growing out of this old but until recently rarely mentioned salary question.

The following analysis is therefore presented, practically without comment.

The circumstances of 2,263 teachers teaching outside Winnipeg City, were reviewed. Of these 2,091; viz. 1,834 women and 257 men, are engaged in Elementary Grades; while 172, viz. 63 women and 109 men are employed in Intermediate and High Schools and Collegiate Institutes.

The salaries paid to teachers in Elementary Schools, June, 1917, is indicated in the following graph:--

Elementary Grades

Women Teachers

Earning—		
\$8 per week and less.....	34	---
\$8 to \$10 per week	90	---
\$10 to \$12½ per week	1289	---
\$12½ to \$15 per week	317	---
\$15 to \$20 per week	94	---
Over \$20 per week	10	---

Men Teachers

\$10 per week and less	11	---
\$10 to \$12½ per week	160	---
\$12½ to \$15 per week	66	---
\$15 to \$20 per week	51	---
\$20 to \$25 per week.....	8	---
Over \$25 per week	8	---

It will be noted that salaries have been figured on a basis of 52 weeks per year—this is a view rarely taken but in the opinion of the writer is the correct one and the only one upon which comparisons can be made with the remuneration obtained in other vocations.

In Secondary Schools, salaries paid to teachers in June, 1917, is indicated as follows:—

Secondary Schools

Women Teachers

Earning—		
\$15 to \$20 per week	29	---
\$20 to \$25 per week	31	---
Over \$25 per week	3	---

Men Teachers

\$15 to \$20 per week	10	---
\$20 to \$25 per week	56	---
\$25 to \$30 per week	20	---
\$30 to \$35 per week	14	---
Over \$35 per week	9	---

N.B.—It is to be noted that the latter graph is on a scale three times as large as the former.

Children's Page

Came a-roaring bumble bee,
Pockets full of money,
"Ah, good morning, Clover sweet,
What's the price of honey?"
"Help yourself, sir," Clover said,
"Bumble, you're too funny:
Never clover yet so poor
She must sell her honey."

In her wimple of wind and her slippers of sleep,
The Twilight comes like a little goose-girl,
Herding her owls with many "Tw-whoos,"
Her little brown owls in the woodland deep,
Where dimly she walks in her whispering shoes,
And gown of shimmering pearl.

—Madison Cawein.

Over the shoulders and slopes of the dune
I saw the white daisies go down to the sea,
A host in the sunshine, an army in June,
The people God sends us to set our heart free.

The bob-o-links rallied them up from the dell,
The orioles whistled them out of the wood;
And all of their singing was, "Earth, it is well!"
And all of their dancing was, "Life, thou art good!"

—Bliss Carman.

EDITOR'S CHAT

Dear Boys and Girls:

There's an army marching across your land. You are being invaded by a brave enemy who, with band playing and flags flying, will soon swarm over your trenches, cross your river in a minute, capture your hills, your valleys and even your streets, so cleverly and so quietly that before you know it, General June will have taken you prisoner and bound you with chains of flowers so that you may not escape from summer. But listen and you will hear the fairy band, led by Bandmaster Robin in his scarlet coat, followed by the meadow lark cornets and old Mr. Woodpecker, banging his drum. Then come the bugler blackbirds and green-

coated grasshopper piccolo players, and here comes Mr. Frog with his big bassoon. Then in all the splendor of his green and blue uniform comes General June. Around him cluster his officers, Major Summer Rain, Major Sun, Captain Cool Night, Captain Dew and then comes the long army. First the scouts, in their marigold yellow uniforms, and green coats. Then long lines of Grass, sturdy and strong, in green coat and cap; and in all their brilliant uniform, Privates Buttercup, Columbine, Violet, Windflower, Honeysuckle, and all the great beautiful host. Then with a rustle comes the Wild Rose cavalry. Armed with their long thorn lances, how fine they look in their pink

coats! And then follows row after row, steadily marching, sturdy, strong, the greatest army of all—Canada's Wheat. For this army are the General, the Majors and the Captains working day and night to make them strong, and able to fight their enemies.

And what is this that follows on the army's heels? Why, it must be the army medical corps. Here is captain Dandelion, with Witch Hazel, Caraway, Burdock, Seneca Root and a host of others. Here, struggling with their burdens comes the motor transport, busy Privates Ant and Snail. And now, with a comfortable buzzing come the fat Bee-cooks with their hive kitchens, and brown coated Squirrel-nutkin, the best forager we have.

And last of all we see a motley crew in all uniforms and colors. Here are the busy engineers, who build the dams and bridge the rivers — Beaver and Muskrat. Their work is good, but their marching leaves much to be desired. What a fearless sapper bright-eyed Mr. Gopher makes, digging his underground passages with busy teeth and paws. Flying overhead, dipping, diving and tumbling comes Cadet Mosquito Hawk, with a record for enemy planes hard to beat. He is, however, overshadowed by the beauty of Flight Commander Dragon Fly, with shining

wings and gleaming headlights. Here's King's Messenger Dove in his sober gray uniform with the heavy ring around his neck; and Signallers Fire-fly and Glow-worm. Here are two masters of camouflage, Chameleon and Tree toad, who can change their colors in the twinkling of an eye. Above and around this army are many busy flying machines, June-bugs, Lady-bugs, Butterflies, Moths, darting and springing hither and thither, always on the watch. Wireless messenger Wind makes his report to General June every few minutes—here a shower is needed; there a breeze; here a sun barage would help, or dew shells would be welcome. Here is a clover field canteen open to all comers, and a brook that would be an excellent drinking fountain. Tall sentinel poplars, maples and elms line the roadway, and sweet rest-houses of shade are offered by hawthorne, plum and cherry tree.

The marching army reaches the hill tops and surveys the land from which General Winter has retreated. All that is left of his army is an occasional north-wind air scout. Darkness, cold, and barrenness of earth have been overcome, and now the battalions are scattered to their different camps, and the whole beautiful land and all its inhabitants are prisoners of June.

OUR COMPETITIONS

We have had a very great many good compositions sent in this month—and we have had some poor ones. Now the poor ones were poor chiefly because the writers made the mistake of thinking that all the patriotic work they could do depended on the money they could make. This is not our idea at all. While making money for the Red Cross, the Patriotic Fund, the Y.M.C.A., is very necessary sometimes, we think you can safely leave most of that work to the grown up people, except in cases where you might have a school fair, a

concert or something of that kind. But boys and girls will find their hands full if they help in the garden, in the barn and the chicken yard; if they help to do the work a man would do, and if they save food—especially wheat flour and sugar—if they knit and sew and do a hundred and one things to help in the house, on the farm and in the school. All useful work is patriotic, because when we accomplish such a task as growing vegetables, weeding, hoeing or knitting socks, we have not only helped our Empire with our work,

but made ourselves better boys and girls and better Canadian citizens.

The prize this month is awarded to Grace Miller, Willow Range S.D.

Honorable mention is given to Alex. Froom, Gladys Bate, Carberry; Maggie Buck, Gladys Skeeles, Kate Sneguich, Wallace Stanbridge, Stonewall school; Gudfinna Ragnheidur Kjartanson, Ragner Eyjolfson, Ragner Paulson, Sigurdur Kjartasson, and Thorbjorg Erlendson, Reykjavik school; Beatrice Cassidy, David Pollon, Clanwilliam school; Lancelot Hall, Charlotte M. Hall, Edna Shepherd, Elizabeth Bailey, Josie Wender, Maude Shepherd, Solsgirth; Mabel Hotton, Adaline Hotton, Eva Wilmot, Sam Hotton, Albert Hotton, Bethany school; Pierre Lebeach, Rita Rheume,

Elmina Langevin, Mildred E. Middleton, Jeanne Jacob, St. Rose du Lac.

Special Mention—Rhoda M. Tucker, and Wilfred Fitzmaurice, St. Rose du Lac.

This sentence is taken from one of the Honorable Mention stories: "America shall win the war. Therefore I will work, I will save, I will sacrifice, I will endure as if the whole struggle depended on me alone." This is a good sentence, well written, and expressing a fine thought which it would be well for every Canadian to take to heart. If each one of us felt the individual responsibility of the war there would be no strikes such as have recently disgraced Winnipeg.

WHAT I INTEND TO DO THIS SUMMER TO HELP WIN THE WAR

I think our subject for this month very interesting, and a live question which we might ask ourselves. It is not our duty or privilege to cross the sea and meet out our services in far-off war-stricken France, but this does not mean we cannot serve, and serve in the true sense of the word, too. Our duty as those left at home, is to do, and do well, the task we find nearest at hand.

I live on a farm, and am very sure every boy and girl can find lots of varied army service there. I have hens setting now and shall soon have a flock of chickens to attend to. I also have a garden and spend lots of spare moments weeding and caring for it during the summer months. I help in

many other ways around the farm, too, and think these tasks very interesting.

I also intend doing some Red Cross work during the summer and helping all I can at teas, picnics and such, which will be going on under our Local Branch.

When the fall comes and the crop has to be cut and threshed and stored, I shall work in the field if I am needed, or do extra chores around the barn to recompense all I can the extra help needed.

With all I think our privileges are many, though the task may seem small and unimportant, it is not big things that count most.—Grace Miller, Willow Range S.D., Grade VIII, Manitoba.

PATRIOTIC WORK I WILL DO THIS SUMMER

This summer is going to be a busy one. Because now help is needed to win the war. Every body should try their best to help to win the war. I

have been thinking about what I could do to help win it.

One of the things I am going to do is to stay on the farm and work as much

as I am able to do. Then I am going to help with the haying for the cattle so we can feed them properly and sell their meat to other parts of the country.

Then there is one thing I am going to do myself and nobody is going to help me, it is going to be my own. In one of the corners of the field I am going to take a little piece of ground where I am going to have a little vegetable garden. First I am going to make six rather large vegetable beds. They are all to be an equal distance apart.

When I have done this I am going to get the following vegetable seeds: tomatoes, carrots, turnips, beets, cauliflower and lettuce seeds. These I am going to sow in my little garden.

When I see little green plants peep up I am going to water them every day

so they will grow well. I am going to take as good care of the garden as I possibly can.

When the plants grow big some weeds will grow, too. So I am going to take all the weeds out so the little plants have plenty of food.

I hope to have a nice little vegetable garden this summer.

My mother will have a large garden. If I can grow enough vegetables to provide my home my mother can send the vegetables from her garden to other parts of the country. Then I have to work a little more than this. I am going to keep the house with mother. We will all try our best to help win the war.

Thorbjorg Erlendson (age 15).
Grade VII, Reykjavik School, Man.

WHAT PATRIOTIC WORK CAN I DO THIS SUMMER?

This year food is needed by the Allies in large quantities and they are depending on Western Canada to produce much of it.

As a large number of men are overseas the boys are left to help on the farms.

I have worked on the farm for the

last three summers and will have to do an extra part this summer.

This summer I can work on my uncle's farm and in the evenings work in the garden. I can help out the food problem by raising rabbits, pigeons, chickens and a pig.

Wallace Stanbridge, age 13.
Grade VII, Stonewall, Man.

THE GOPHER AWARD

Children will be interested in the report of the Gopher Contest published on another page. It is no small thing to destroy 200,000 gophers, for it means the saving of millions of dollars to the province. Our congratulations

go to the prize-winners—Elgin, Winkler, Coultervale, and St. Joseph schools and to the rural schools that made such a fine record. It is pleasing to know that many of the schools asked that their prize money be given to the Red Cross.

Special Articles

MUSIC IN THE JUNIOR GRADES

Normal Method (B.3)

(Method)

When little children come to school they wish to sing, and they should sing. It is the teacher's duty to help them. She will select right songs—songs of home, country, nature and action, and any others that are suitable. She will introduce these in the right way and see to it that they are sung in a proper spirit and with pleasing effect.

The songs suitable for children are those which children appreciate. These are not always the songs which appeal to older people. That which cultured musicians call classical may well be outside the range of children's classics. And not all songs about children are good songs for children.

It is not easy to name a single book of songs that can be recommended to teachers of grades I and II. A selection must be made from many sources. The following list contains the names of books that have much in their favor.

Songs and Games—Jenks & Walker, Ditson; Songs of a Little Child's Day—Poulsso Smith, Bradley; Small Songs for Small Singers—Neidlinger, Schirmer; Lilts and Lyrics—Riley & Gaynor, Summy; Songs of the Child World (I)—Jessie Gaynor, Church; Songs of the Child World (II)—Riley & Gaynor, Church; Song Echoes from Childhood—Jenks & Walker, Ditson; The Song World—Carrie Bullurd, Boston Music; Songs for Schools—Farnsworth, Macmillan; Songs of British Isles—Hadow, Novello; Nature Songs—Knowlton, Bradley; Art Song Cycles—Miessener, Silver B.; English Folk Songs—Gould & Sharp, Curwen; Song Primer—Bentley, Barnes; Songs for Little Children—Eleanor Smith, Bradley; Stevenson Song Book—Schirmer;

(also the Music Readers—Normal, Educational).

The Rote Song

There is no set method for teaching a rote song. Here is a plan that has been successfully adopted:

1. The teacher tells the story contained in the words of the song. She tells this in a living way. She repeats the words until the thought and words are fairly well known.

2. She sings the first verse or part of it very softly, then repeats it, still softly, then sings again with a little more volume. If the circumstances demand it, she may sing it a fourth time. If she cannot sing herself, she gets some older pupil or some singer in the neighborhood to sing for her; or if there is an organ in the school some one may play the air.

3. Pupils are now encouraged to try the song—very softly at first, and with more pronounced tone later on. Some say the teacher should lead in this exercise so as to keep the children from making errors. Others say that the teacher should never sing with the children, as it prevents them from depending upon themselves.

4. After the pupils as a class can sing freely, individual pupils are asked to sing or permitted to try.

All through the teacher keeps the thought of the words to the front. All singing is an expression of genuine feeling. On this account the practice of any song is not carried on too far any one day. The minute it grows stale it should be discontinued. It can be sung again next day or the next week, but it must always burst forth from the hearts of the children as a natural expression of feeling.

During the singing, pupils should be in a proper position. they should

breathe freely and naturally; the air of the room should be fresh and pure; the voices should be free but not forced; and the pitch should be accurate, that is, the pitch-pipe or piano should be always referred to as a standard.

There will be monotonies in the primary classes. Many of them may be eliminated by careful training. They may be placed in a "listening" class for a time. Class drills on street calls such as "Morning papers!" and graded exercises in practice of intervals will help very greatly. Gradually these monotonies may be encouraged to take part in the singing, although it would be well to pass them by at first when calling for individual pupils to sing. As a rule, however, individual singing should be as common as individual reading or speaking.

An analysis of rote songs leads to perception of rhythm, intervals and all other musical conceptions. For example, children will delight in finding similarities in the rhythm of nursery rhymes such as Old Mother Hubbard, High-diddle-diddle, Little Miss Muffet, and they will also find similarities and differences in the rhythm of songs they have learned. Without direction, they beat time or sway to the music. This sense of rhythm should be kept alive. When in due time the notation of music is presented to children it should correspond in every detail to something in their experiences of which they have already become conscious. This is fundamental. Anything in notation that does not go back to something in experience is meaningless. In the rote song stage, the teacher aims to develop musical experience—an appreciation of rhythm, tone, harmony, fitness of music to words, and the like. If the experience is so rich as to lead to creative effort, so much the better. It is sweet to hear a little child sing a song he has learned from another; it is sweeter still to hear him hum his own little musical thought. We have sinned against childhood in not encouraging free expression. In this connec-

tion teachers should read "A Guide to the Chassevent System," by Marion P. Gibb, published by Heinemann, London.

Rote singing is not to be confined to grades I and II. All through the school, songs may be learned in whole or in part by listening. In one sense, it is more important to have a good ear for picking up tunes than a good eye for reading a musical page. Too much musical notation is ruinous to musical culture. The little child was expressing a very natural protest when she said, "I'm just sick of practising the scales!" It is disastrous when a pupil loses his musical ear.

The First Steps

(a) Rhythm.

The analysis of a rote song leads in the first place to a perception of rhythm. Children can be asked to speak like the clock: "tick-tock, tick-tock," or to speak like the drill-sergeant, "Left! Right! Left! Right," or to swing like the dancers: "One! Two! Three! One! Two! Three!" or march like the soldiers: "Dum! dum-de! dum! dum Dum! Dum! Dum" or to run "Hippety-hop," which is the foundation of 6/8 rhythm. Dozens of experiments of this nature will lead to such an appreciation of rhythm, that the reading of music in later years will be easy and delightful. In a single lesson it is possible to hum a dozen little songs and hymns, and have the time noted and named by the children—not named as 2/4, 3/4 and the like, but as a walking time, a skating time, a lullaby, a jiggety-jig time, etc. Nor is this silly. It is fundamental. Music is an appeal to the soul through the ear, and the first thing to do is develop a musical ear. Appreciation of rhythm usually precedes appreciation of pitch. It is just here that rhythmic games, such as those of Wilson-Dorrett are invaluable.

(b) The Scale

Appreciation of pitch is developed through placing the tones used in singing in a scale. There are many scales

which might be taught. No one will deny that the first scale to present is the ordinary major scale, derived from the three common chords. Teachers are not agreed as to the manner of introducing the scale. Some say, teach the common chords in order; others say, sing down and up the scale in the old-fashioned way. Suppose we take the latter alternative.

The teacher sings down to syllable *la* softly and lightly. After a few repetitions the pupils imitate her. Then she runs up lightly. They follow her. Then she gives the names *do, re, mi, fa, sol, la, te, do*. They follow her. And so it continues.

In singing to scale, the pupils should keep between *D* below and *E* or *F* above; that is, they should practice in the keys of *D, E, E flat* and *F*.

When the scale is learned, it should be sung to different forms of rhythm and to express different feelings. For instance, pupils may make a walking scale—each tone being doubled; a marching scale, each being quadrupled with pronounced accent; a hippety-hop scale to the well-known air. Or they may sing the scale to express anger, or victory, or laughter, or may sing the baby to sleep, or set the soldiers marching. In all this, enunciation should be clear and the voices low and soft. The words of *Hamlet* are very fitting: "Speak the speech, I pray you, as I pronounced it to you, trippingly on the tongue."

The Beginnings of Musical Notation

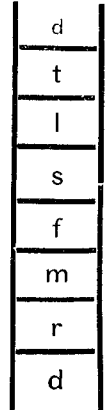
(a) The Ladder

The question now arises as to the notation that shall be employed at first to express conceptions of pitch and rhythm. One can take the simple notes of the scale and represent them by letters. These letters may be grouped so as to denote all forms of rhythm. This gives us the tonic-sol-fa method, so popular in some parts of the British Isles. For instance, the opening measures of the National Anthem might be written something like this:

d d r | t . d r | m m f | m . r d | r d t | d -- ||
 (This is a simplified form of the tonic-sol-fa).

Every teacher, even if disliking the tonic-sol-fa system as such, should know enough about it to read and write any simple air, expressed according to such a system. It is very convenient and saves time in every way—both for teachers and pupils. But there is a prejudice against this system in America, and our teachers, rightly or wrongly, aim directly at giving pupils a mastery of the staff notation. Hence, they introduce first of all the ladder.

On the rungs are printed the first letters of the syllables used in singing the scale. A systematic drill is given on the intervals until the pupils are perfectly at home. There is a great advantage in drilling from a ladder instead of calling out numbers. (Indeed there is no reason at this stage for introducing the names or numbers for the tones of the scale). When the ladder is fairly well known, the teacher can do good work by



pointing in succession to tones that will result in a known air. A good line to begin with is "Vesper Hymn"—*m s | f s | m s | r s | m s | f r | d t | d -- ||*
 In this way rhythm is taught incidentally. Once again let it be said that the pitch pipe should be used to keep the voices within proper range.

In teaching from the ladder the teacher can easily follow a system that will ensure special drill when difficulty is found. For instance, many pupils find it difficult to sound the *la* after some other syllables. The teacher noting this, will devise special exercises, such as: *do mi | fa la | mi la | re la | ti la | sol la | mi re | do -- ||*

If the teacher varies the exercises and has competitions and games, the pupils will enjoy the practice of the ladder. They cannot know the simple intervals too well. And while this work is being done there will be special drills in rhythm. This will include the rhythmic games mentioned previously.

(b) The Grand Stave

From the ladder it is an easy step to the great stave of eleven lines and ten spaces. This will be about the time they enter grade II. The symbol of the whole note may be introduced and placed on any line and the scale completed with reference to it. Then the note may be placed on any space and the scale completed with reference to it. In this way the pupils find that there are only two varieties of writing—do is on a line or on a space. A recognition of this will be of great assistance later on.

Practice on the grand stave may be carried on for a long time until relative positions of the notes are known at sight. Of course sharps and flats are not used as yet. No matter where the writing of the notes is placed on the stave, the voices are kept within the range stated previously. And throughout, regard is paid to rhythm, breathing, voice production, shading.

It will be possible while this work is being done, to give exercises to test ability to recognize intervals and rhythm. For instance, the teacher sounds do, stating that it is do. Then she sounds sol and asks pupils to sing up until they find the sound. Later she says: "Tell me, without singing up by steps." Each syllable leaves its mental effect, and to hear the sound is to name the syllable automatically. If the work is thoroughly done, many of the pupils will be able to give the syllable to simple airs, as if by intuition. This power is more common than most people suppose. Such work as this will develop power to recognize third, fourth, fifth, etc., if a teacher cares to use these terms, but such a course is not recommended at this stage. Children need not be top-heavy with musical terms.

(c) The Staff

When pupils have a fair acquaintance with the scale as it is pictured in various stations on the grand stave, they may be specially directed to the upper five lines, as being their own peculiar property, indicated by its own

special sign or clef. The key of E flat is selected to begin with, as all the notes are within the proper range of the voice. The children look at the signature and are told that the little marks are intended to tell us where do is placed. In other words they provide the key to unlock the music chest. They may be given the name "flat," and are told to remember that the three flats tell us do is on the first line. All theory is reserved for later days. It is the same with the time signature when it is introduced. 2/4 says "we walk." 3/4 says "we waltz," and so on. Now a simple air is written. Expressed in tonic-sol-fa it might read d r | m r | m r | d - ||. It may be written in half notes or quarter notes, as both of these will have been used on the grand stave. Or the corresponding rests may be given occasionally, and the names introduced incidentally. The names and the values are best learned through use. If at any stage pupils cannot read readily they should be given time to read silently, just as they do in their reading primers. Nothing will be lost by allowing children to familiarize themselves with the notation by copying or writing out something of their own. (Here see Miss Gibb already referred to). It is possible at this stage to drill on the scale by numbers. As numbers are called or pointed to by pupils, give the name of the corresponding syllable and sing the correct pitch.

All through this period, pupils should still be singing rote songs. Indeed the time devoted to study of the notation should be only a small part of the time allowed for the study of music. And again let it be said the pupils should sing softly and sweetly, and in every ease when words are sung they should express genuine feeling. Drawling and unimaginative rendering should never be permitted.

During this period of instruction, the teacher will continue exercises in rhythm. She will make continued use of terms used to denote speed, force and the like until it becomes second

nature to the pupils to respond to these. The pitch pipe or piano will still be used to keep voices within their proper limit.

The Chart

It is a very simple and natural transition from the blackboard exercises just mentioned to the musical chart. This is but a series of graded exercises suitable for pupils of grades II and III. A chart is in many ways better than text-books in the hands of pupils. When a teacher cannot afford to purchase such a chart as that of the New Normal Music Course, she may make a very suitable one for herself with crayons and brown paper. Usually the exercises consist of simple arrangements without words, interspersed with exercises set to words. Usually an exercise contains but one fresh difficulty for the pupil. The following exercises (written in crude tonic-sol-fa, instead of on the staff, for the sake of convenience) will illustrate the progressive steps to be taken:

Key G 2/4	d	r	m	d	m	r	d	d	d	r	m	d	m	r	d	d
Key G 2/4	d	r	m		m	r	d		d	r	m		m	r	d	
Key G 2/4	d	r	m	—	m	r	d	—	d	r	m	—	m	r	d	—

One two three, Do you see How we dance, Light and free?

Occasionally pupils should attempt to write out what they have just been singing. The steps in a complete musical exercise are:

1. Getting the key and rhythm.
2. Singing the syllables.
3. Singing the neutral syllables.
4. Studying the words.
5. Singing the words.

At some following lesson the procedure may be reversed, as follows:

1. Repeating the words.
2. Singing to neutral syllables.
3. Singing the ordinary syllables.
4. Writing out the selection in tonic-sol-fa notation.
5. Translating staff to notation.
6. Adding the words.

It is not to be expected that writing will follow reading in every case, but every pupil should do some of it. Nothing will contribute to mastery of the printed page like attempts to express

musical thought. It is only custom and tradition which keep children from attempting to reproduce musical ideas.

In using the chart, the teacher will supplement the exercises by hundreds of her own construction, and will encourage pupils to write others. Among such exercises will be those intended to drill upon some difficult interval or some difficulty in time or rhythm. Exercises in rhythm are particularly valuable and with many pupils very necessary.

In all exercises, care must be taken to have pupils sing with expression, and with right use of the voice. Breathing exercises, vocal exercises, exercises in enunciation, analysis of the thought, are all essential parts of each lesson.

Exercises in Rhythm

These are very necessary and very easily constructed. First there are exercises in breathing or thinking rhythm already indicated. Then beginning in grade II measures of 2/4, 3/4 and 4/4

time may be written in either notation and pupils drilled in singing these to a neutral syllable such as do or la. For instance, very simple exercises may be as follows:

In Letter Form.

1. d d | d - | d dd | d - ||
2. d d d d | d - d - | d dd d dd | d - - - ||
3. d d d | d - d | d - - ||

In Ordinary Notation

For grades III and IV more difficult measures may be written. The exercises may be very easily graded. As a variation, the teacher may point to measures one by one as a song is being

sung. Or pupils may be asked to imitate the drum and to write out the music. For example, a very common rhythm is thus expressed: $d \ \underline{dd} \ d \ \underline{dd} \ | \ d \ \underline{dd} \ ||$. This may be written, of course, in the ordinary staff notation. Boys particularly will delight to write out the rhythm of the bugle calls. A little practice in reading and writing will enable children to sing perfectly as to rhythm the ordinary exercises of the Music Readers. Is there anything wrong in letting children tap their desks gently with their fingers? Isn't this better than having the teacher whip the desk with her pointer? Is a time language ever necessary?

Musical Composition

It is flying in the face of creation—but not universal custom—to suggest that from the very beginning pupils should be encouraged to make up little songs for themselves. They do it naturally in infancy and probably would continue to do so in later years but for the common practice in schools, which ignores, if it does not discourage, original effort. No one suspects for a moment that an attempt by children to set words to music will result in anything wonderful in a musical sense, but it may keep alive the spirit of music in the soul of the pupil, and arouse ambition, and both of these things are very important. Such an attempt as the following to get a suitable song for the words of a little verse, is surely worth something in musical training. The pupils were in Grade III. The verse selected was:

Dark brown is the river,
Golden is the sand,
It runs along forever
With trees on either hand.

The compositions as given, when reduced to a simple notation, were as follows.

1. $d \ r \ m \ f \ | \ s \ s \ \quad | \ f \ f \ m \ m \ | \ r \ - \ - \ - \ | \ d \ r \ m \ f \ | \ s \ s \ \ m \ | \ s \ f \ m \ r \ | \ d \ - \ - \ - \ ||$
2. $d'. \ d' \ t \ | \ s \ - \ m \ - \ | \ d' \ m' \ r' \ d' \ | \ r' \ - \ - \ d' \ | \ d' \ .d' \ t \ | \ s \ - \ m \ d' \ | \ d' \ m' \ r' \ s \ | \ d' \ - \ - \ ||$
3. $m \ - \ - \ | \ s \ - \ \underline{ll} \ | \ m \ - \ - \ | \ s \ - \ - \ | \ s \ - \ l \ | \ t \ - \ d' \ | \ f \ - \ - \ | \ - \ - \ f \ | \ m \ - \ r \ | \ m \ - \ f \ | \ s \ - \ d' \ |$

The Use of the Voice

To keep the voice of children soft, sweet and vibrant is most desirable. It

is impossible to give directions in print, but it is a fine thing for teachers to be informed on the subject. Such books as Howard's "Child's Voice in Singing," or Curtis' "Voice Building and Tone Placing" would be good to begin with. Practical demonstration does the rest. It is unfortunate that on this subject teachers of music do not agree. There is often a self-confident assurance among vocalists that prevents discussion of principles and methods. One of the best rules is that of the professor who said, "Get the children to breathe naturally, to hold up their heads without leaning them to one side, and let them sing freely but without force, and if you like, let them try to imitate the lightness of the birds, the snowflakes and the like. The voice production of children is naturally pretty good. If there is no straining, the voices keep right."

The Music Reader

The reader begins where the chart ends. A discussion as to its use will require another article. The method to be followed may be inferred from what has so far been given. In the earlier grades, pupils must necessarily spend time on mastery of the notation. By the time they reach grade VI they should be able to sing simple songs in one or two parts almost at sight. They will be able to do so if the work of the first three grades, as outlined here, is carefully and thoroughly done. At the same time, the end of musical education is not the mastery of musical notation. It is free, joyous singing, and to this everything else must be subordinated. All exercises in rhythm and in use of the voice, all drills in intervals and all practice in phrasing must look towards this end. Individual pupils and classes must find delight in musical expression. The spirit of

$l \ - \ f \ | \ m \ - \ m \ | \ r \ - \ r \ | \ d \ - \ - \ | \ - \ - \ ||$
the room as depending mainly upon the spirit of the teacher, is mainly responsible for satisfactory results.



LIEUTENANT ALAN McLEOD, V.C.

The reproduction is from a painting presented to the Stonewall School Board and unveiled on Empire Day by Hon. Dr. Thornton. For the engraving we are indebted to Richardson Bros., Winnipeg.

AN ARITHMETIC SUGGESTION

Probably the most successful contest I have tried is an Arithmetic War. The children's names are entered and are ranked as privates. Every arithmetic problem solved correctly is a German prisoner captured. When thirty prisoners are taken, the private is given a promotion, thus being pro-

moted until he has reached the highest position. I have found this to be a contest that draws interest in arithmetic, and unlike some contests, holds the pupils' interest.

LENA G. SHAY, Teacher.

McConnell School.

School News

A Unique Report

In the Departmental Bulletin this month there is a summary of a report of a commission to deal with the school accommodation in the municipality of Lansdowne. Here the very step has been taken that has so long been advocated by the Western School Journal. Municipal Consolidation and Municipal School Board go together. Herein lies the solution of most of our educational difficulties. The Department of Education and the Council of Lansdowne Municipality are to be congratulated upon the appointment of the Commission, and the Commission is to be congratulated upon its excellent report.

Empire Day Programmes

The Journal has received for publication a number of Empire Day programmes. There will be an article dealing with all of these in next issue. We are very gratified to know that great attention was given to the study of distinguished men and women of Great Britain. Owing to the demand, the Journal has decided to open a department next year in which the biog-

raphy of one or two distinguished sons or daughters of Britain will be given.

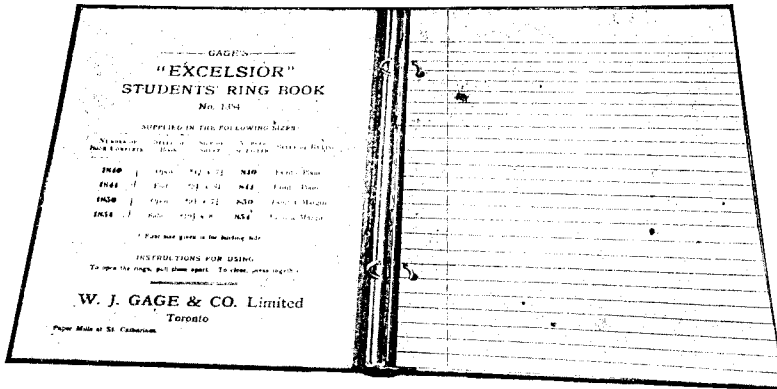
At the Provincial Exhibition to be held at Brandon July 22 to 27, there is a very fine prize list prepared, open to all schools. Prizes are given for general school work, manual training, cookery, sewing, laundry, drawing and color, and hand work and nature study. Special provision is made for rural schools. Teachers should write for the prize list, to Secretary, W. I. Smale, Brandon.

The teachers of Winnipeg have contributed two per cent. of their salaries to Red Cross work. This means a total of about \$14,000 a year. In addition, they and the pupils are raising thousands of dollars every year through sales of work and concerts. There is a lesson here for others.

In the March issue, teachers were to send in the names of men who had enlisted but who had not been mentioned in the honor roll of the Department. The name of Private W. D. Platt, of Mountain View School, has been sent in.

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How to Carry Money

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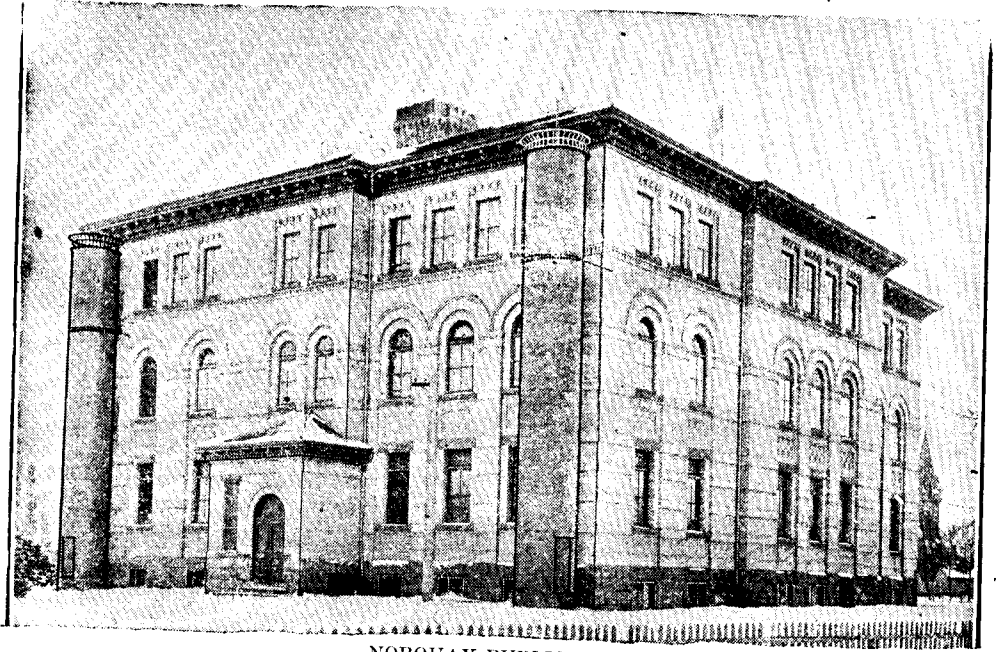
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To the average traveller is recommended the purchase of \$20 and \$50 cheques, with a small number at \$10, to provide a sufficient currency for the requirements of a day or two in any of the smaller foreign countries. The charge for these is 50 cents per \$100, which in view of the facilities accorded is a most reasonable one.

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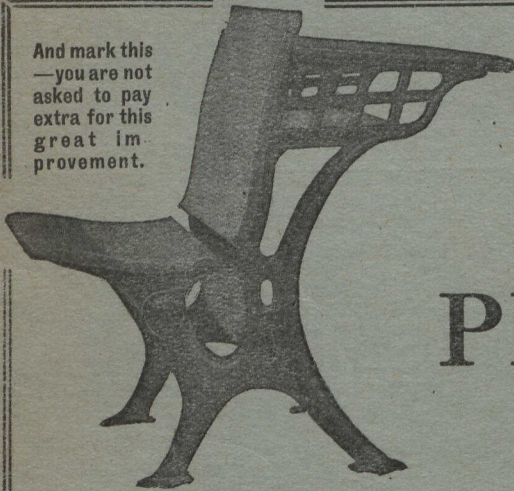
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