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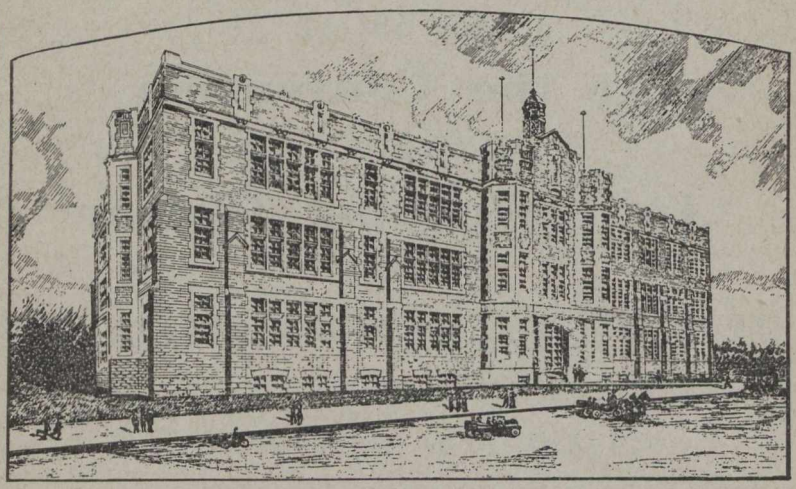

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VOL. VI. TORONTO, APRIL, 1918 No. 8

The School

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Editorial Notes

Educational Crazes.

Public Schools on this continent have their crazes in due season. There was the spelling craze which lasted throughout the first quarter of last century. It was followed by the grammar craze which grew out of the spelling craze. Then came the arithmetic craze which overlapped the grammar craze. Although this last craze has been dealt hard blows by educational authorities who have driven it from many of the High Schools and have thrust it into more modest spaces in the Public School time-tables out of deference to such new subjects as nature study, manual training, household science, art, agriculture, and general science, it still afflicts some schools on this continent and some teachers. It is still with us in Ontario where it is divorced wholly from the practical or where in abstract forms it is presented to primary pupils as number work. Mr. Dearness of the London Normal School seems to have had these late-lingering phases of the craze in mind in his recent address at Stratford. "Practical teaching", he urged, "gives the child something profitable to do and does not consist in vain repetition." "The art of calculation is essential, but our schools do in several years with tremendous output of effort what could be done easily in one year if the pupils were old enough to realize the relation of arithmetic to real life".

The Ontario Educational Association.

The O.E.A. meets at the University of Toronto, April 1st, 2nd, 3rd, and 4th. Every section of the Association offers an interesting programme. Dr. Foght, the American expert in rural education, will deliver several addresses. All Ontario teachers and trustees are eligible for membership. Reduced railroad fares offer inducements; the Easter vacation furnishes the opportunity; and the need of change of scene and of professional stimulus provides the justification. Why should you not attend? Write at once to R. W. Doan, 216 Carlton St., Toronto, for a copy of the programme of the O.E.A.

School Attendance. A year ago, in response to an interest in school attendance which is now world-wide, Saskatchewan amended her School Attendance law. The new law was a somewhat unique experiment, but a year's trial has gone far towards proving it a very successful experiment. In a test made in 1916 before the new law came into force, the actual attendance in 1450 rural schools was 68 per cent. of the possible attendance and in a similar test made in the same schools on the same date in 1917, after the new law had become effective, the actual attendance had increased to 76 per cent. of the possible!

The weakness in the old law—and in school attendance laws in all democracies—lay in the local control of the agencies for enforcement. The new law established a central control in a school attendance officer in the Department of Education. All teachers throughout the Province must transmit to this officer detailed records of the irregular attendances or non-attendances at their schools. The officer must immediately call the attention of the parent of each pupil whose attendance has been unsatisfactory to the provisions of the School Attendance law. He will do this in a courteous and sympathetic letter. If the letter is of no avail the officer must forward a second letter with a warning of peremptory action under the law if the pupil concerned does not report at school within five days. If the second letter is of no avail, the provincial police, who become truancy officers under the law, are required to take action to enforce the penalties provided for truancy. During the first year of the enforcement of the Act it was found that 14,043 children out of 60,723 in rural and village schools were irregular in attendance or always absent. The first letter from the central attendance officer reduced the number of parents or guardians to whom it was necessary to send the second or peremptory letter to 5,510. Only 935 pupils failed to report themselves as in attendance in response to this second letter. With regard to these the Provincial police had taken or would take legal action.

The official report upon the first year under the new law contains two or three interesting comments. The children of foreign and non-English parents were responsible for most of the non-attendance. They have begun to respond freely to the demands of the new law. Illness has caused 22 per cent of the non-attendance. The reports from the schools and the correspondence with the parents are providing the Department of Education with a fairly accurate census of the children in the Province who are neglected or seriously defective in mind or body.

Teachers' Salaries. Last month reference was made in these pages to the effect of increased salaries on the status and the efficiency of the teaching profession. But there is another, and a very important, viewpoint. What effect would a general

increase in teachers' salaries have on the children in our schools? The child (though he seems to be occasionally overlooked) is the basis of the whole educational system. For him the training schools, the universities, the High and Public Schools exist. For him time and money are spent on systems of education, on buildings, on everything connected with schools. The successful teacher becomes such only as he studies the needs and the nature of the child.

And what does the child require of his teacher? The best possible equipment for good citizenship. What is needed for such equipment? No longer are the three R's considered sufficient for this purpose. The child needs as a teacher one who is himself a good citizen, well-read, well-travelled, broad in outlook on men and movements, refined, well-educated, not a narrow-minded pedagogue, not a dour disciplinarian, not a disgruntled "left-over" from some other profession, not one who is "tired of teaching" and is hoping for other employment, not one who feels that the fates (in the persons of boards and inspectors) are against him.

The child must be taught how to think, how to conduct himself under various circumstances, how to understand human nature in its various phases— how to be a man. And the teacher who is to do all this for him must have opportunity for reading, for travel, for advanced study. But how many teachers can afford two or three educational magazines and a dozen good books per year on present salaries? How many teachers in eastern and central Canada have seen western Canada and the Pacific? Not many; their salaries do not permit travel. How many teachers take summer courses? Some; but not nearly enough.

Parents want (or say they want) the very best of teachers for their children. As matters are at present, the best that is in the men and women in the schools is not being brought out because of the lack of opportunity for advancement. And this lack is due to generally inadequate salaries. It is said that a "bad" boy can be transformed if he is given good food, good clothing, and proper care and attention. Could not a similar transformation be produced in a "weak" teacher, an average teacher, or a good teacher if he were given the facilities to prepare himself more thoroughly for the tremendously important work he has to do?

Increase in salaries is a reform that is coming—a reform that must come if education is to do what it must do after the war. And it will come more swiftly when the realization dawns that unfortunate or unfair conditions imposed on the teacher react most potently on the child. Reforms are not often brought about by grumbling or by dissatisfaction; when they are, the cost to the grumbler himself is too great. They come by solid work and by the demonstration of the need and of the advantages to be gained.

British History in the United States.

The following extract from an article on *The Study of English History*, by Professor Robert L. Schuyler of Columbia University, in the February number of *The History Teacher's Magazine*, will be of peculiar interest to Canadian teachers.

"One reason, no doubt, why the true nature of the British Commonwealth is not generally understood in this country is the habit of calling it an "empire". To apply to an intimate alliance or quasi-federation of democratic communities, together with their dependencies, a name laden with associations of military subjugation and personal despotism is to court misapprehension and confusion.

"'The word Empire, the word Imperial', a distinguished contemporary British 'imperialist' has said, 'are in some respects unfortunate. They suggest domination, ascendancy, the rule of a superior state over vassal states. When we, who call ourselves imperialists, talk of the British Empire, we think of a group of states, independent of one another in their local affairs, but bound together for the defence of their common interests, and the development of a common civilization'. Of late a serious effort has been made to escape from the tyranny of an outworn nomenclature by substituting the term 'Commonwealth' for 'Empire'. The British Prime Minister has publicly referred to the British Empire as a 'Commonwealth of Nations', and the Imperial Conference held in London in 1917, in an official resolution, employed the expression, 'Imperial Commonwealth', as a substitute for the conventional designation.

"Then, too, Americans have been slow to overcome ancient prejudices inherited from the days of the American Revolution. They have cherished the belief that the British Empire, from which the United States revolted, is in a sense antagonistic to true Americanism. 'Patriotic' school histories have fostered this notion, and until very recently twisting the British Lion's tail was a favourite diversion of one species of American 'statesmanship'. Few of us know how far the British Commonwealth of to-day has moved from the British Empire of George III.

"It is with this Commonwealth of Nations, not with the insular state of England, nor with the British Empire of the past, that Americans in the future will be more and more concerned. Sound educational policy requires that the closely-knit peoples of the two English-speaking commonwealths study each other's history. There has been of late much criticism of the current teaching of history in America. The whole subject of the school curriculum and the present scheme of college entrance examinations in history is the subject of reconsideration by committees recently appointed by the American Historical Association and the College Entrance Examination Board. It is earnestly to be hoped that in making their recommendations respecting English history they will prove

themselves genuinely forward-looking, and will appreciate the urgent need of promoting in the United States a better knowledge of the history of that world-wide Commonwealth with which it cannot fail to be in most intimate contact, that 'new Venice whose streets are the oceans'."

Educational leaders in the United States are not only reorganizing their history courses, but are gradually getting rid of the prejudices fostered by an earlier style of textbook. They are doing their part to establish good relations between the two great English-speaking commonwealths. Canadian teachers can do much to aid this movement by studying the history of the United States, and by ceasing to emphasize such features of Canadian history as the boundary disputes.

War and Technical Education.

The war is as much a battle of technical wits as a test of physical courage. Only the technical efficiency of Germany, an undoubted product of her system of education, has enabled her to hold out so long. Only by beating Germany at her own game will the war be won.

Recognising these facts the United States has decided to mobilise the educational institutions of the country which have special facilities for technical training. A "Committee on Education and Special Training" consisting of three military men and five civilian educators has been created. The civilians, who act in an advisory capacity only, are Dr. Charles R. Mann, Dr. James R. Angell, Mr. T. W. Dietz, Mr. James P. Munroe, and Dr. Samuel P. Capen. They represent varied phases of educational endeavour. This committee will mobilise the country's schools and colleges behind the army. It will arrange for the technical education of men needed by the several branches of the army, particularly the Ordnance Bureau, the Signal Corps, and the Engineers. During the next six months between 75,000 and 100,000 men will be given intensive training in the schools and colleges. These men will be drawn from the armed forces of the nation and as far as possible only those whose previous training and natural aptitudes guarantee the success of the experiment will be chosen. In this way the resources of the colleges will be used to meet the needs of the army, and the most will be made of the powers and capacities of the man-power of the country. The scheme is an excellent one. But the race is against Father Time. Will the United States be able to beat him? It must—and will.

Don't "Grouch"

In the world in general, in educational systems in particular and, perhaps, in the classroom even more especially, the teacher sees many things that seem unfair, that seem to require adjustment. But why grumble? Or (to use an expression still

classed as slang) why "grouch"? Some of these injustices the teacher may be able to rectify; some may be beyond his reach. In any case, he should be cheerful. The teacher cannot afford to have (using the slang expression now as a noun)—he cannot afford to have a "grouch"; it injures his digestion, his "nerves", his temper, his success. The teacher with a "grouch" has lost at least half his value; his associates, perhaps even his colleagues, with the perversity of human nature, take delight in augmenting that "grouch".

Cheerfulness is the sunshine of the classroom, as of many other places. Under cheerful, happy conditions, children do better work, the teacher does better teaching, things don't "go wrong". How many times a teacher says, perhaps only to himself or to herself, "Now, I shouldn't have punished that boy, but I was nervous!" But the harm has been done and may be beyond reparation. Who seems more tired at four o'clock, the cheerful teacher or the "cranky" one? Which one "keeps in" several pupils "after four"? Which one uses the strap frequently?

It is not uncommon to hear parents say of a teacher that he or she "has a way with children". What is that *way?* It is the cheerful way and at the same time it is the masterful way, is it not? It is never the strained way, the anxious way, or the nervous way, is it? The teacher who hopes to "get out of teaching some day" rarely has that *way* about him, has he?

Whatever comes, or whatever goes, *don't "grouch"*.

"Well, little chap," said the friend picking up one of the children, "what are you going to be when you're a man?" "Nuffin'." "Nothing? Why so?" "Because," said the child, "I'm a little girl."

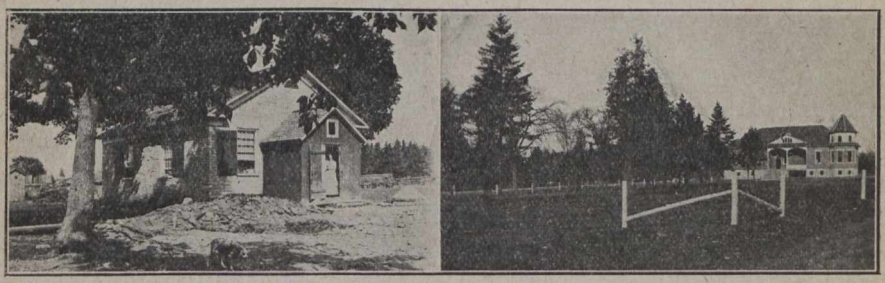
The young teacher had been having a trying time with her nature study class because Johnnie had discovered he knew more than she did about birds and frogs and had assumed a derisive attitude in consequence. She appealed to the man Principal who replied, "Next time you have the class, let me know, and I'll come in and take charge of it. I think I can settle Johnnie." He was duly called in and all went well at first. With confidence the Principal said at the conclusion of the lesson, "Now you may each ask me one question." Johnnie had been silent up to this time. When it came his turn he rose and asked: "Has a duck eyebrows?"

Genial Clergyman (visiting the village school): "Well, my little man, what do you do in school all day?"

Promising Pupil: "I wait till it's time to get out, sir."

Young Wife: "I got a beautiful parchment diploma from the cooking college to-day, and I've cooked this for you. Now guess what it is." Husband (trying the omelet): "The diploma."

Primary Department



BEFORE AFTER

S.S. No. 6 THURLOW, HASTINGS CO.

Send in a "snapshot" of your school for reproduction on this page.

[THE SCHOOL undertakes to answer promptly, by letter, all reasonable questions, if correspondents enclose stamped, addressed envelope. When this condition is not met, answers are given on this page as soon as space permits.]

Correspondence

The Ontario teacher whose letter appeared under "Enquiries", on page 325 of the January number, now writes as follows:

Many changes have taken place in my classroom since my appeal in the January issue. I figured out my difficulties, made one more mighty effort, sent a written notice to the trustees stating what the new regulations require and asking whether they intended to get what was needed. A possible resignation was suggested. I found that, contrary to my previous ideas, rural trustees really have education at heart. In accordance with my advice they made two common cupboards instead of buying a book-case. We put our books in one. With the other we have carried out the "hot lunch plan". No more broken furniture when the teacher comes back at noon, because now she is there to enjoy the hour with the class!

We'll get the blackboards, too, because we have about eight or ten dollars in sight. Of this amount two or three dollars will be spent on books for the library and with the rest we shall buy the necessary material for a school bazaar. In this way our money should be multiplied by five. What we shall do then is another story. We must get the parents to come to school to see some actual work.

Cheerfulness, gratefulness, and determination have apparently won over the parents and trustees.

Any suggestions as to making "things" for the bazaar will be gratefully received.

Private C. D. Jones writes from Witley Camp as follows:

"I wish to offer some suggestions, which may be helpful to the teacher whose enquiries appear on Pages 325 and 326 of the January number of THE SCHOOL.

"As to the problem of the noon intermission, I think it would be a good plan to let one of the older boys look after the boys and one of the older girls look after the girls. These could be elected by the pupils themselves. They could hold office for a stated period and at the end of that period might be eligible for re-election.

"As to equipment, I think it is a shame that the trustees do not provide it. The teacher might hold a concert and use the proceeds for the purpose. This would mean work, but would pay better in the end than the aching arms and the troublesome throat.

"Once, when I hadn't much kindergarten paper left, my pupils used old copy-books to make paper houses, and I would like to pass this suggestion on to the teacher with little equipment. Again, articles can be made of twigs, birch bark, etc. Maps can be drawn on the snow. Trenches also can be made in the snow to illustrate modern warfare."

Seat Work for Second Book Grades

RUBY E. WRIGHT
Ryerson Critic Staff, Faculty of Education, University of Toronto

ARITHMETIC.—After lessons in notation: Write in words 1,406; 5,780, etc. Write in figures: seven hundred and six; four thousand, three hundred and one, etc. Arrange in order of size: 1,570, 56, 8,405, 92, 725, etc. Analyze numbers as: 14,760, 701 = 1 unit, 0 tens, 7 hundreds, 0 thousands, 6 tens of thousands, etc. Questions and simple problems involving table taught. Write in Roman notation: 56; 175; 427, etc. Write in words and Roman notation: 475; 091; 1,426, etc. Write in words and figures: LXV, CXIX, CCXC, etc. Addition and subtraction questions. Simple problems involving only one step.

SPELLING.—Write words. Use words correctly in sentences. Use two or more of the words in a sentence. Where words are connected, write a short story using all the words correctly.

COMPOSITION AND LANGUAGE.—Write the story used for re-production. Write short stories on interesting subjects suggested by the teacher. Some very unique answers are given to questions like these, "What would you like to be when you grow up?" and "What subject do you most want to learn and why?" This is one answer: "I would like to learn writing best because if I know how to write when I am old and my son is overseas I can write and tell him his sister was married on the first of June".

Write a letter in correct form. Use homonyms in sentences: *weak, week, hour, our, sent, scent, cent,* etc.

Place on the board short interesting paragraphs having no punctuation marks or capital letters. Have pupils rewrite correctly. Write abbreviations for words as: *doctor, street, dozen,* etc. Write words for the abbreviations: *ct, Ont., Can., Pte.,* etc. Combining short sentences into a short paragraph. Combine sentences using proper conjunctives as: *because, though, since, although, as, when, before, after.* Write an original composition from a blackboard outline.

HISTORY AND CIVICS.—Have the children write the stories told them: Columbus, Jacques Cartier, Madelaine de Verchères, Laura Secord. Who would you rather have been, Columbus or Jacques Cartier, Madelaine or Laura Secord, Brock or Kitchener? Why? Name the Allies. Why is Canada at war? Write what you can about Kitchener, King Albert of Belgium, Sir John French. Who makes the laws for our country? Where are they made? Who represents the king in Canada? What is he called?

GEOGRAPHY.—Tell all you can about a hill, mountain, valley, etc., and tell where we can find one of each. What is the difference between a hill and a mountain? A mountain and a volcano? Where would you rather live, on a mountain or in a valley? Why? What is the difference between a river and a lake? Use crayons to draw a picture showing hill, mountain, and valley. Cut this from paper and mount. Draw a picture of a river, marking the banks, mouth, source, bed, tributaries, delta, etc. Tell all the work a river does—the use of a river. What becomes of the soil it carries down? What is there in the city that takes the place of a river? Make different things in plasticine, using blue crayon for water. Draw the continents; name them; name the oceans. Tell *something* you know about each continent. Name three foods that come from other countries. What is a compass? How did people tell directions before the compass was used? Draw a compass, marking in all the points you know. Make a compass from a circular piece of paper, folding to show the points, N., S., E., W., N.E., N.W., S.E., S.W. Using a pencil as a pointer tell what direction different places are from here.

There are so many things one can give in geography, that it would be an endless task to write them all. These are a few.

LITERATURE.—Use crayons to illustrate the stories. Have paper-cutting illustrations. Each week have children write an answer to: "Which story did you like best and why"?

NATURE STUDY AND HYGIENE may be treated in much the same way. In every instance the questions used for seat work must be only those which will make the children *think* and will bring out their *own* interpretation of what has been taught, not the *words* of the teacher.

Socialization of the Kindergarten-Primary School

ETHEL M. HALL
Kindergarten-Primary Form, Ryerson Public School, Toronto

DR. DEWEY speaks of the tremendous social defects of the usual type of primary school of the present day, its narrowness and dullness, its isolation from life and the *isolation of the children from one another*, its *emphasis* upon the *mere absorption* of *facts* by uncooperative individuals, its *competitive standards* of *success*, the *negative* character of its discipline—and he rightly claims for a reasonable education *more active work*, where it is not a crime to *help one's neighbour*, but where a spirit of free communication, of interchange of ideas, suggestions, results both of successes and failures of previous experiences become a dominating note of the recitation.

He says: "We must conceive of the industrial side of the work as methods of life, not as distinct studies. We must conceive of them in their *social significance* as *types* of the processes by which society keeps itself going, as agencies for bringing home to the child some of the principal necessities of community life". On the playground, in games, in sport, social organization takes place spontaneously. There is *something to do*, some activity to be carried on requiring a natural division of labour, selection of leaders and followers, mutual co-operation, and emulation.

In most schoolrooms the motive and cement of social organization are alike lacking. Such schoolrooms endeavour to prepare future members of society in an atmosphere entirely foreign to any social order in actual life.

The usual primary school puts the means ahead of the end. That is, the emphasis is placed upon the constructive idea, not upon the *effect* of the industry upon the characters of the little pupils. It is the *creation* of *society* we are after, *not* the weaving of mats, the modelling of forms, the folding of paper, the illustration of stories, the building with blocks. Those activities are a means to the end of creating good citizens—citizens whose hands as well as brains will be trained for life's work.

The freedom of movement of these industrial subjects of the programme appeals to the child who is naturally social and loves to help some one else.

Gesell says: "The over-zealous parent at the door and the relentless time-piece on the wall conspire to keep an artificially precocious atmosphere in the primary school. Order, system, detail, and prescription have replaced spontaneity, grace, and initiative. Dictation has taken the place of investigation. The *spirit of childhood languishes* and in its place stalk the stern figures of propriety and formalism". "Children are

variable, inconstant, and unstable; like birds on the wing they dart hither and thither, glad of the air they breathe. They work intensely, unevenly, in short periods of effort, and *flourish in freedom* rather than in confinement. Mood, the unerring guide of childhood, may not be grafted on from outside but must spring from a joyous inward response to a *frank, healthy, child-like atmosphere*".

Even if an utter revolution of method of work should be necessary, it would be justified if we could by such a change preserve *emotion, eagerness*, and *enthusiastic response* to work. Programmes should not be inflexible. There are days when an entire session, emphasizing and illuminating one idea, should wipe out all divisions into reading, writing, number or manual work. These *are not ends in themselves* but *means* of *recording*, illustrating, and impressing one idea. Children may be taught to think of the larger aspects of things and learn how to use the accomplishment of reading to gain a wider knowledge of literature and to know that the *appreciation* of a literary selection and the *power to make the best selection* is *far beyond* the mere mechanical knowledge of the symbols involved; that these are a necessity but the *end* is the *appreciation* of the *beauty* of *language* contained in the work, whether prose or poetry.

It is the *great privilege* of the kindergarten-primary teacher to convince the little child that life is a beautiful thing, that school is one of the happiest and most joyous places outside the *home*. She can do this by surrounding them with all the beauty within her power.

Children rise to their environment; visualization of brightness and cultural surroundings have much greater effect than lectures on hygiene. But the kindergarten-primary teacher who would do this must have a *far vision* which takes her and her pupils beyond the narrow walls of her schoolroom, or town, or city—which sees them not only as citizens of their own country but as part of the great world, every section of which is so near us to-day.

In the kindergarten-primary school may be laid the foundation of the dreams of youth. Here may be sown the seeds of beauty and purity which grow into strong desire for life as it should be. The seeds of altruism begin to develop early. The social instincts should be developed in childhood by providing an environment suitable for the growth of high ideals of social service. Influenced by his early environment, Byron wrote:

> There is a pleasure in the pathless woods,
> There is a rapture by the lonely shore
> There is society where none intrudes—

but this is not the natural healthy spirit of childhood. As the social instincts begin to develop early in life they should have a chance to develop in a *free, pure* atmosphere, otherwise the nature will be warped and never reach its full measure of growth.

Most children long for companionship even though they may draw away from the social group because of natural nervousness or reserve. The reserved child is often terribly misunderstood and suffers accordingly. The wise teacher who is a student of human nature may be able to overcome this difficulty and rescue a splendid character for the world. "Such a child is never more alone than when in social circle and never more in company than when alone". Imaginative children, like Robert Louis Stevenson, create playmates of their own.

> When children are playing alone on the green
> In comes a playmate that never was seen,
> When children are happy and lovely and good
> The friend of the children comes out of the wood.

The product of the work of the kindergarten-primary school is evidently not a given amount of knowledge or skill or mere mental power. It is not even character in the shallow sense in which it is usually interpreted. It can be nothing less than a capacity for effective social service and a desire to imitate the One who said "He that is greatest among you let him be your servant".

"The consciousness of what worth a man is to others represents and measures a large part of his true self". The same may be made true for the child. The school is a great factor in his education. It is his first experience in living out his life in a social group. When at home his wishes were respected. Now he is thrown into a group of many personalities. His desires may be recognized or not. He learns to give and take and to feel that he is a part of the social whole.

Social training need not interfere with the individuality. The stranger the individuality of the unit in the group, the more characteristic will be the group, each member supplementing the other. The function of each member is a different one and the thought of each is different, but the opposite viewpoint acts as a restraint upon the group as a whole, binding it together for self-help and mutual improvement. The kindergarten begins the teaching of social service by developing the idea of the interdependence of the baker, miller, farmer, and all upon the Creator. The kindergarten-primary school should continue the lesson.

The true greatness of Pestalozzi lay in the social spirit of his pedagogy. He said: "So much I early saw, that the surroundings make the man". In this lies to a great extent the problem of discipline. A conception of the word *discipline* which would mean *nurture*, physical, mental, and moral, would allow children natural, fearless expression of body and mind. It would establish a home-like atmosphere in our primary schools which would be a definite benefit to both teachers and pupils. "The average teacher needs a freer environment to persuade her to relax".

"The *moral life* of children hinges upon the *subtle influences* of *daily living*. The *good cheer*, the *unselfishness*, and the general *moral tone* of

the home and the school slowly and certainly build up the moral fibre of childhood. The child's standard of right and wrong are not formed *to-morrow*, but *yesterday* and *to-day* out of the *joys*, *sorrows*, *duties*, *sacrifices*, and *companionships* of *daily living*. *Social contact* builds up a sense of *honour* and a legitimate pride *which all the formal ethics* in the world *cannot instil*".

Primary Number Work

Continued from the March issue.

FLORENCE M. CHRISTIANSON
Niagara Falls South

TO get the first combination say, "Who will write any two numbers whose sum is ten?" At once several hands go up and the child designated runs to the board and writes ten and zero. Should he place the zero under the *one*, correct him at once and impress from the first correct placement. It is unnecessary to give the reason for it. Another child supplies the opposite of the first combination. Others eagerly supply the other number facts till we have the table.

Incidentally we learn the doubles, as two 2's are 4; 2 and 2 are 4 or, to write it briefly, $2+2=4$. A little talk about the signs for addition, subtraction, and equality—why we use them and how essential it is to make them exactly correct—provides the psychological moment to let them try making them for seat work. Show them how to start $10+0=10$

$0+10=10$

Then ask them to do the 10's family (still on the board), using the signs. At another time put figure C on the blackboard.

(C)													
	4	7	2	3	3	3	4	7	1	4	11	12	10
	3	2	2	2	4	3	5	1	6	10	1	1	10
	–	–	–	–	–	–	–	–	–	—	—	—	—

Let the class reproduce at their seats, finding answers. At another time have it reproduced, using the signs, and when the children come up to class have the table *read* with the signs.

(D)						
	1	2	2	3	3	4
	1	1	2	2	3	3
	–	–	–	–	–	–

We never use a table like figure D. It requires no thought and leads to guessing. Devices as shown in figure E we use constantly. It can be arranged quickly and gives a lot of exercise in the various combinations. The $+2$ may give place to any other figure and the device will serve later for subtraction and multiplication by writing -2 and $\times 2$ respectively.

These devices insure accuracy and rapidity in the mechanical operations. The aim is to establish these simple combinations to such an extent that a child will perform them with very little conscious effort. If all the pupils could be made expert in all the combinations with the various digits we should never come across Fourth Book pupils who add up columns of figures by "one's". We aim first at neatness, then accuracy, then rapidity.

In beginning the circle device we ask for volunteers to run around the circle. We aim at getting around without falling, *i.e.*, missing a combination. If a child fails, another supplies the correct result, or the one who failed supplies the elements of the combination in horse-chestnuts, thus arriving at the result. A little more time is required in the latter case but it pays in the end.

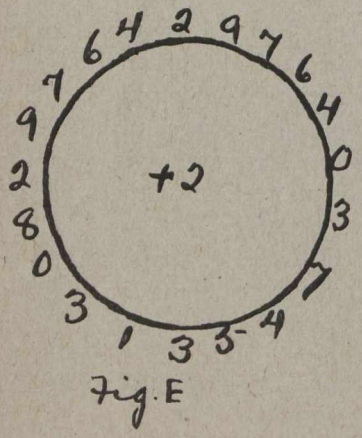


Fig. E

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21									
31									
41									
51									
61									
71									
81									
91									100

Fig. F

After a few days of this play pupils become expert and get around with increasing speed. When we have worn +2 out, *i.e.*, know and can tell all the combinations instantly, we take +3, etc., with the other digits.

Problems follow. We use only the numbers we know in combination. Examples will readily suggest themselves to enthusiastic teachers. Pupils enjoy this work and there is scope for originality. Children pretend they go to market and propound questions accordingly.

We count to 10 by 2's without any effort or special teaching. In a few days they go to 14, 18, 20. The other day a pupil was asked to count to 20 by 2's. Then it was suggested that it is not much harder to come back. At once a child said she would like to try it and she did so and did it correctly.

Then, to increase the difficulty we count by 2's beginning with 3 as 3, 5, 7, 9, etc., and no serious difficulty presents itself because of the previous familiarity with the combinations.

For further seatwork to supplement the other, the Roman numerals are placed on the board in this fashion.

1 = I
2 = II
3 = III
4 = IV
5 = V
6 = VI
7 = VII
8 = VIII
9 = IX
10 = X

Some day in class we talk about them. They are told that it is a new way to write numbers, that this is the way they are written on the clock, and that we must be careful to make them just right. "How many of you could make these ten just as they are on the board?" All answer in the affirmative. When their class comes up again they bring their slates and we examine them and talk about them, comparing them with the blackboard models. Soon they come to do them well and some day they are asked "Can anyone write 4 on the board in the new way?" Usually there are volunteers.

As pupils progress in their work and require additional exercise, number facts containing three numbers are introduced. As they stand in class the suggestion is made that we make 12 using 3 numbers. They are shown how this is done.

4	5	7	2	7	3
4	5	3	3	2	2
4	2	2	7	3	7
–	–	–	–	–	–

Pupils get their horse-chestnut boxes and begin to try combinations. As soon as a child has one he writes it in the table. Another child will supply a re-arrangement of the digits. We are glad to have these but it is the making of the original combination that is especially coveted because it requires real hard thinking and hard thinking, they have learned, increases the gray matter in the brain-cells and that means greater brain-power.

These problems are, of course, much harder and provide work for quite a long period but they, too, yield their secrets in time. After a good deal of proficiency is attained, it is suggested some day that they do some number work of this kind on their slates. At first even few combinations are welcomed and the number grows with each attempt.

The greater part of our number-work is oral; we have just enough written to ensure ability to put work down and to secure correct form. As soon as we know the numbers to 10 in order a table (fig. F) is placed on the board so as to get the numbers to 100 in their proper relationship. We commence the table and put in as many numbers as we can count. Then, from time to time, we add to our early possessions and so the table grows. Then we try to make the table on the slates. It will be crude at first but we must be satisfied with the crudest effort if pains have been taken with the work. Every good point must be noticed at once. Let pupils themselves suggest improvements in their own work. Each

attempt shows betterment. For drill put a skeleton table on the board and have pupils run up and place the numbers as far as desirable. It will be found that children learn to count and write numbers to 100 with very little effort.

Rainfall and Vegetation of Africa

JOHN B. BRENNAN, B.A.
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[In the December issue there appeared the outline of a method of teaching the geography of a continent from the rainfall map. This article gives an application of the method to the geography of Africa.]

NOTICE:

1. The southern and northern extremities of the continent are about equi-distant from the equator.

2. The fewness of interior mountain systems lessens the possibility of any great precipitation inland.

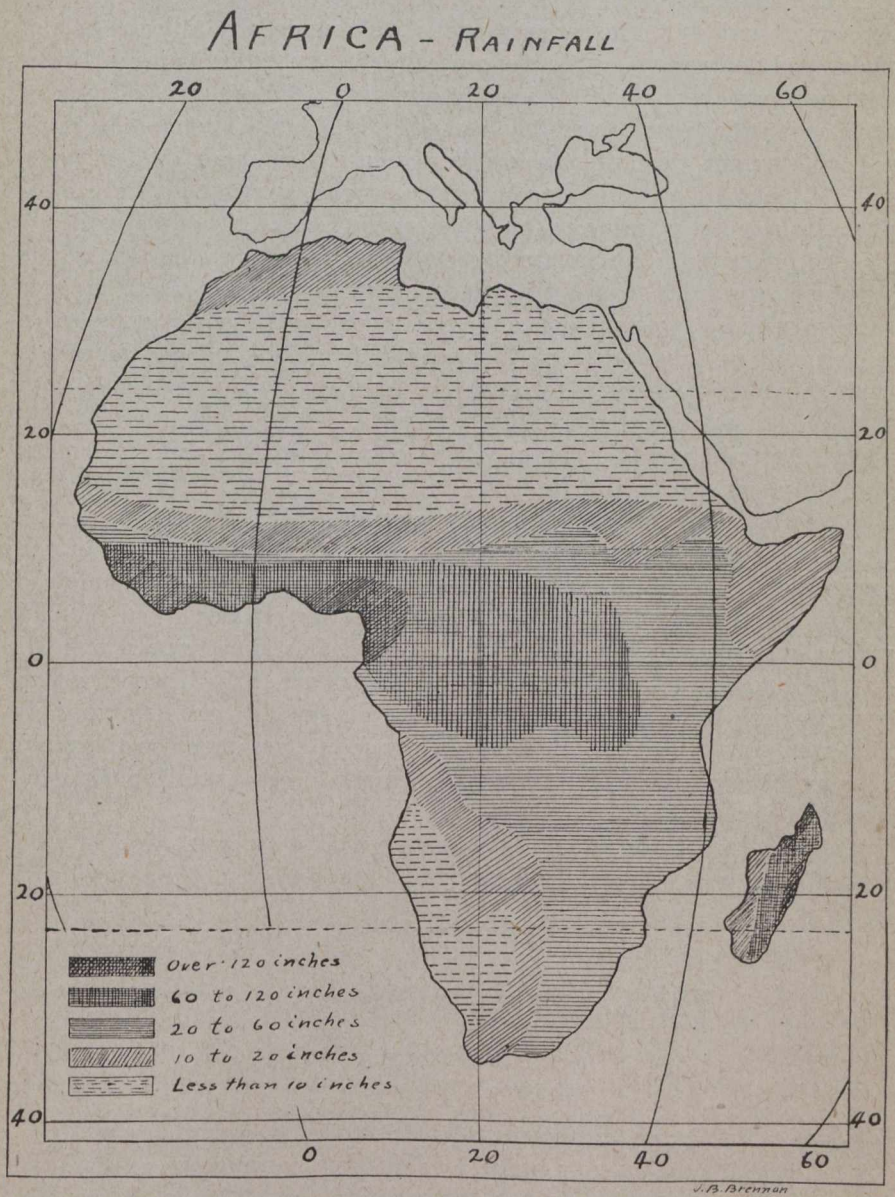
3. Owing to the compactness and great extent of the continent, large areas of the interior are removed from oceanic influences.

4. The prevailing winds are the north-east and the south-east trade winds. The westerlies touch the north and south fringes of the continent.

Africa has an abundant rainfall in the zone of equatorial calms. The high temperature from the vertical rays of the sun over any place causes an indraught of air to that place. The warm, moist air ascends and, condensed in the higher regions of the atmosphere, the moisture falls as rain and the condensation makes way for another indraught. Thus, in the tropical regions of Africa, the winds and rains follow, as a rule, the movement of the sun between the tropics; and the rainy season of any locality in the torrid zone begins almost immediately after the sun has reached its zenith at that place. This makes it quite evident that all places lying between the tropics of Cancer and Capricorn will have a double rainy season, one with the northing sun and one with the southing sun, while those places near the tropics themselves will have but a single rainy season. From this it is also evident that the quantity of rainfall, which is heavy near the equator, will diminish to the north and south as the regions on the borders of the tropics are approached.

The heavy rainfall on the coast of Guinea is due to the fact that when the sun is north of the equator, the winds from the Gulf of Guinea flow inland. Condensation of their moisture is caused by the upward deflection of these winds by the escarpments formed by the edges of the plateaux.

The south westerlies cut across the north-west corner of the continent, and deposit a light rainfall in Morocco and Algeria.



The only region of the southern part of the continent that has a deficient rainfall is the west coast. The north-westerlies should deposit rain here, but they pass over a cold current. On reaching the land they are

warmed and so do not give up their moisture. Compare this desert area with that off the coast of Chili in South America.

The Sahara has often been pictured as a great level expanse of sand. As a matter of fact, the western part is surrounded by a broad belt of plains and depressions, while the central parts are extensive table-lands, with here and there small groups of mountains. The summits of some of these mountains reach from 4,000 to 5,000 feet high. Therefore, it must not be thought that the Sahara is absolutely rainless. Whenever a sufficient elevation occurs to intercept a cooler stratum of the atmosphere, rain is not wanting in the midst of the Great Desert (oases).

The presence of the Sahara desert is due to the fact that the winds advancing toward it from the north-east come from a cooler and moister to a warmer and drier region and so are constantly losing in moisture and gaining in temperature as they approach. Then, again, the winds from the Indian Ocean, intercepted by the Abyssinian highlands, lose their moisture before they reach the Sahara. On the Atlantic side, the north-east trade winds constantly blow away from the land. Nor does any rain reach the Sahara from the south-west. A barrier of mountains deprives the desert of rain from this quarter.

The Kalahari region is almost rainless, not only on account of the great heat to which it is subjected, but also because the winds coming to it from the east expend their moisture on the high slopes of the plateau which faces the Indian Ocean. Then, too, as has already been pointed out, the Pacific winds in the region of this desert are chilled by cold ocean currents and, being warmed as they reach the land, do not give up their moisture. In the desert regions the heavy dews consequent on the rapid changes of day and night temperature partly compensate for the deficiency of rain.

Notice that the island of Madagascar receives a great deal of rain from the south-east trades at the expense of the east coast of the continent.

The Campaign in Mesopotamia*

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University of Toronto Schools

THE third phase of the war in Mesopotamia extends from May, 1916, to the autumn of 1917. During this campaign most of the fighting took place in the Tigris valley, from 25 miles below Kut to 250 above. The success the Turks had gained at Kut had naturally

*For a review of the war in Mesopotamia to the fall of Kut see the Supplement to the *Special War Edition*.

enough encouraged them and they were resolved to resume the offensive on the two central fronts—on the Tigris and in Persia. There were indications also that, while holding their entrenched positions, they intended to work down the line of the Euphrates against the British base in Mesopotamia.

To the British two courses presented themselves—one, to distribute the forces in order to guard the various points of attack; the other, to push boldly up the Tigris at full strength and strike the enemy a vital blow at Bagdad from which centre they were operating. The former plan, it was thought, would lead to a passive defensive everywhere, so the advance on the ancient capital was decided upon. Such a stroke would relieve pressure on the Euphrates and Persia and preserve quiet in all the districts for which the British were responsible.

The main cause of troubles in Mesopotamia was the lack of sufficient facilities for river transport. The war in this quarter of the globe was from the first a river war and all operations were dependent on the Tigris. Troops, equipment, food, and other supplies had to be conveyed by river; and if such disasters as the check at Ctesiphon and the fall of Kut were to be avoided, it was urgent that the deficiency in transportation be made good before this new advance commenced.

General Lake felt this strongly and, as a result of his influence and his reports, the War Office took up this matter in July, 1916, with such thoroughness and vigour that when the time came for military operations to be resumed, the condition of the river transport had been completely transformed. Efficient hospital ships had replaced the inadequate barges of former days, and ordinary troop and supply transports had been provided in abundant numbers.

The system of land transport was also re-arranged. By the end of 1916 three lines of railway, manned chiefly by natives of India, were in operation in Mesopotamia; one from Basura to Nasrieh on the Euphrates; another up the Tigris valley from Kurna to Amara; the third, a light field line from Shiekh Saad to the foremost position held by the British on the south bank of the river. In addition to these three lines a considerable body of animal transport had been collected.

Lack of heavy guns, aeroplanes and other necessaries of war had been another fertile source of failure. These deficiencies were also made good during the summer and autumn; so that when General Maude, who succeeded Sir Percy Lake in August, took command, he found himself (thanks to his energetic predecessor) at the head of an army sufficient in numbers, thoroughly equipped in all respects, and eager to wipe out the memory of former reverses.

Before the advance upon Bagdad could be commenced the recapture of Kut was a necessity. When military operations were re-commenced

in December General Maude's force faced the Turkish entrenched position at Sanna-i-Yat on the northern bank of the Tigris. On the southern bank the British were about eleven miles up stream, facing the new Turkish position which extended from the Tigris, about three miles northeast of Kut, to the Hai stream about two miles south of Kut and thence swept round to a point two or three miles west of Kut. The enemy had pontoon bridges over the Tigris and the Hai within this half circle. Against any attempt to work around and cut them off, the British were secured by difficult country to the north and to the south of the river. Thus, if they were strong enough for offensive action, they could cut the Turkish line of communication along the north bank between Sanna-i-Yat and Kut. This would open up the road to Bagdad, 115 miles distant.

General Maude decided on a daring course of action. The plan was to hold the Turks at Sanna-i-Yat, and meantime to seize a point on the Hai stream and clear out the Turkish trench system on the south bank. Then, having passed round to the south of Kut, the river was to be crossed at a point as far west as possible, the Turkish communications were to be cut and the force at Sanna-i-Yat trapped. This plan necessitated the separation of Maude's forces; yet, with high confidence in his splendidly equipped troops, he decided to risk it. Lieutenant-General Cobbe was given a force to hold the Turks at Sanna-i-Yat and Lieutenant-General Marshal was to seize a point on the Hai stream.

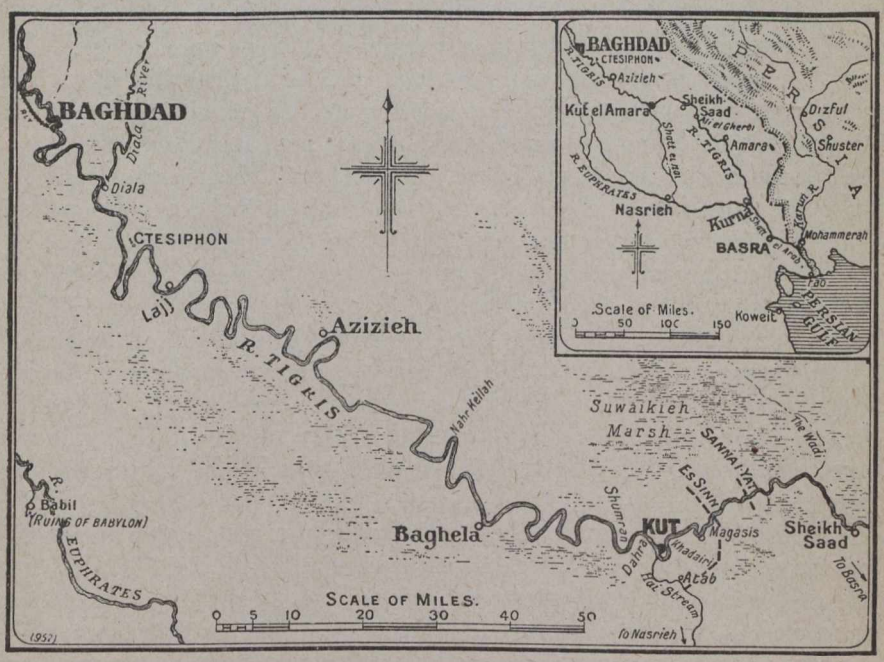
The advance was begun on the night of December 12th, and every detail was carried out with the utmost thoroughness. By a violent bombardment General Cobbe occupied the attention of the enemy on the north, while the remainder of the British forces marched on the Hai position. This point was taken with ease and pontoon bridges were immediately thrown across the stream. Our troops then turned northward, and aided by their very efficient aeroplane service, advanced several miles down towards the Tigris; in the meantime the cavalry by a wide sweep almost reached the river to the west of Kut.

During the next few weeks General Cobbe kept hammering away with his artillery at the Sanna-i-Yat position and thus aided General Marshall, who was engaged in driving in a wedge towards the river opposite Kut for the purpose of severing the enemy's communication along the south bank. The cavalry had raided the country far to the westward but, owing to the stubborn resistance and the heavy rainfalls, they could not cross the river.

On January 18th the strong Turkish position in the Khadiri Bend just below Kut was taken after hours of hard and sanguinary fighting and this cleared the whole south bank up to the Turks' entrenched position around Kut. The time from January 24th to February 5th was occupied in reducing the enemy position on the Hai salient. This was no

easy matter, for the Turks resisted stubbornly and fought bravely in hand-to-hand encounters. On the 5th, however, their resistance collapsed and they fell back on the south bank beyond Kut.

By February 16th, the Dahra Bend was captured and the Turkish grip on the south bank had been torn away. General Cobbe now began a furious bombardment of the Sanni-i-Yat position, keeping the attention of the enemy focussed, while General Maude selected the southern point of the Shumran Bend as his crossing place and secretly collected guns and material there. On February 22nd feints were made all along the line to draw off the enemy troops and, under cover of these, the crossing was successfully effected.



MAP ILLUSTRATING THE OPERATIONS AGAINST BAGHDAD.

From *The Times History of the War.*

On the following day the Sanna-i-Yat position was assaulted and taken in a bloody fight of great endurance and gallantry on the part of our men. The knowledge of the fall of the river-defence behind had, no doubt, weakened the enemy's resistance; at any rate General Cobbe swept over the whole position and the town of Kut once more passed into British hands.

The Turkish army in Mesopotamia was now in full retreat. Could that retreat be converted into a rout? If so, the advance on Bagdad would be greatly facilitated. The cavalry and airmen harassed the

retreating enemy and were assisted, after February 25th, by the naval gunboats which steamed up from Kut. The pursuit continued without interruption until March 1st when Azizieh was reached. Here General Maude decided to halt and reorganize his extended line of communication, preparatory to a further advance. The Turks had been hard pressed up to this point but, although they had lost many men, many guns, and great quantities of supplies, yet they had managed to escape as a military body.

The cavalry reached Lajj, half way between Azizieh and Bagdad, on March 5th and, with the exception of a few sharp encounters here, met with no opposition until the line of the Diala river was reached. Here the enemy had established machine-gun positions, and a crossing in the face of such a fire was an exceedingly difficult undertaking. The war has not produced any more distinguished acts of heroism than those performed by the British soldiers in effecting this crossing. The operation lasted for some days and many of our men laid down their lives before the work was accomplished. On the south bank of the Tigris the resistance was not so obstinate and by March 10th the enemy on both sides of the river had retired past Bagdad to the north-west.

The next morning the British entered the city quietly and were met by joyous crowds of the inhabitants. To restore order, General Maude issued a proclamation assuring the citizens of the goodwill of the British Government and its Allies. Meanwhile, troops were pushing on beyond Bagdad in all directions to drive away what remained of the Turkish forces. Some resistance was met twenty miles up the river but it was overcome decisively. Thus ended the third phase of the war in Mesopotamia.

Already the re-capture of Kut had produced a remarkable impression on the surrounding countries. British prestige in the Middle East had been restored and this victory went far to atone for the loss of nine thousand men in the surrender of the year before. The Turkish force which invaded Persia had quickly retreated and plans for movement on the Euphrates had been abandoned.

But how much more profound was the sensation produced throughout the entire world by the capture of this ancient capital, Bagdad! It is true that this success had no momentous effect on the main issue of the war and did not decide the supremacy even in the Asiatic theatre. There was still a possibility that the Turks would renew the offensive. Mesopotamia and Persia were by no means secure, even now, from Turkish attacks but the campaign was encouraging in its result; it had been one of unqualified success and of great credit to British arms.

Great possibilities await development in this land lying between the Euphrates and the Tigris. A country which supported the imperial

powers of Assyria, Chaldea and Syria at different periods of the world's history need make no apology for her fertility. A young officer now serving on this front says—"Given irrigation, this will become the most wonderful wheat-producing country in the world. Everything grows to perfection and is fertilized each spring by the alluvial deposits brought from the Persian and Armenian hills of snow. Fishing is good and the shooting excellent—partridges, hares, pigeons, ducks, wild geese, wild boar in any number. Deserts are prominent on the map but four million people dwell in the valley of the Euphrates".

The future of Mesopotamia depends on irrigation and on communication by land and water. The Tigris and the Euphrates are both navigable for a thousand miles; they could both supply plenty of water for irrigation. Railways and canals must be built, but before that the country must have security from the tyrant who has oppressed her for centuries. By the capture of Kut and Bagdad the enemy has been put to flight for the present. It is to be hoped that the Allies may be able to free forever from the ruthless barbarian this very cradle of civilization.

Submarine Warfare

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MANY strange inventions have been used in the present war. Giving due credit to poison gas, the tanks, and other devices, it is to be admitted that the submarine has been the greatest surprise of the struggle. The submarine more than any other hostile agency has upset calculations, and it continues to give many people cause for worry as to the outcome of the war. It has made food dear and scarce in Britain, in France, and in Italy. It has forced the Allies to go on rations. Perhaps it will make us all hungry before the war is ended.

The submarine is not a German invention. Nearly 150 years ago, in 1774, an Englishman named Day was drowned in Plymouth while experimenting with an under-water boat of his own invention. It was an American, Holland by name, who first solved in practical fashion the problem of submarine navigation. His vessel was so highly thought of that the construction of others was at once begun, and since 1901 submarines have formed part of the British Navy. The German naval experts laughed when Britain first added these boats to her fleet but it was not long till this premature laughter was followed by anxiety, for in 1906 Germany awoke to the obvious fact that the submarine had a future.

She realized what a splendid weapon it would be for a nation forced to act on the defensive.

It was due to the foresight of Britain's naval experts that at the beginning of the war Britain had sixty or seventy submarines to Germany's forty. But yet it is the deeds of German submarines that have filled our ears, while little has been heard of Britain's activities beneath the sea. Of course, the reason is not far to seek. The hunter's bag will be large if game be plentiful and if he fire at every living thing he may chance to see. It will be correspondingly small if his aim be to bring down only the rarely-met and dangerous animals, and allow the rest to go unharmed. On all the seas the passenger, trading and fishing vessels, line after line, continue to pursue their lawful enterprises under the British flag. So numerous are they that a torpedo discharged in any direction could hardly fail to strike something that floats. All these vessels are open to the attack of German raiders. On the other hand, the British submarine commander has not a single target in view for, on the declaration of war, Germany's vessels took to their own ports or to the ports of neutral countries while her navy hid itself in the Kiel Canal and in the Baltic Sea, secure from attack behind a mine field and protected by coast batteries.

Germany's submarine warfare may conveniently be considered in its three phases. In the first phase, from the outbreak of the war in August, 1914, till the following February, Germany used her submarines in a legitimate way. She employed them almost altogether in attacking Britain's navy. Here she secured some measure of success and soon brought to the attention of Britain and the world in general the destructive power of this venomous type of craft. In the North sea, in half an hour, a single submarine disposed of the cruisers *Aboukir*, *Hogue*, and *Cressy*, ships of considerable value to Britain. These severe losses taught Britain the lesson that submarine areas should not be patrolled by vessels of the cruiser type but rather by small, swift craft.

Of course, these legitimate successes against warships in those early days did nothing to alter the balance of naval power and Germany's greater but less glorious campaign has been against defenceless vessels. She began to devote her energy and attention to submarine warfare against merchant vessels in the hope of starving Britain and preventing aid being sent to France and to Italy.

With these objects in view Germany entered on the second phase of her submarine warfare. In February, 1915, she declared that "on and after February 18th every enemy ship found in the war region will be destroyed without its being always possible to warn the crew or passengers". The "war region" was the North Sea, the Bay of Biscay, and the part of the Atlantic Ocean touching Great Britain and Norway. Even before this declaration vessels like the *Icaria* and *Ben Cruachan* had been

sunk, perhaps for the sake of a little preliminary practice. When this determination of Germany's was made known, the whole world refused to believe that men would really resort to such practices. They refused to believe that Germany would stealthily slay both friends and enemies; had not one of her plenipotentiaries said at the Hague conference, "The officers of the German navy will always fulfil in the strictest manner the duties based on the unwritten law of humanity and civilization"!

Shortly after the announcement of Germany's threat her submarines set to work. Soon they had torpedoed the *Hanna*, the *Falaba*, the *Harplyce*, and the *Gulflight*. On May 7th, 1915, came the greatest moral shock civilization had ever received and the black horror of it seemed to eclipse the last hopes of human kind. The *Lusitania*, a great passenger liner, unarmed—a mere floating hotel crowded with innocent passengers —was deliberately mangled by a German torpedo and sank in a few minutes with a loss of 1,198 persons. Germany received the news with joyful applause, and with thanksgiving to the German gods who had given this signal proof of divine assistance; she rewarded the commander of the submarine which perpetrated this inhuman deed with the Iron Cross.

The sinking of the *Lusitania* was the occasion for much controversy between neutral nations and Germany, especially between the United States and Germany. Finally, on the threat of severing diplomatic relations, the United States received from Germany the assurance that "passenger liners will not be sunk by our submarines without warning and without taking measures to secure the safety of the lives of non-combatants, on condition that the steamers shall not try to escape or offer resistance". But despite Germany's assurance, they continued to attack merchant vessels whenever they found them, growing more and more ruthless, more and more indiscriminate and less observant of restraint. Sometimes the vessels had been warned and summoned to surrender before being fired on or torpedoed; and sometimes the passengers and crew had been vouchsafed the security of being allowed to take to the ship's boats before she was sent to the bottom; but again and again no warning has been given, no escape even to the ship's boats being allowed. The *Arabic*, the *Hesperian*, the *Ancona*, the *Persia*, and many other passenger boats were torpedoed without warning and many passengers were drowned.

To meet this new submarine warfare Britain commenced to arm her merchant vessels, declaring that by international law commercial vessels have the right to carry arms in self-defence. Naturally, the arming of the merchant marine took a good deal of time. In the meantime the submarining of passenger and merchant vessels continued. Up to April 15th, 1916, 3,117 persons lost their lives on British ships by acts of the

enemy. In four months, from June to October in 1916, 714 British vessels were sunk by Germany's submarines. In October, of the same year, the U53, one of Germany's submarines, arrived at Newport, Rhode Island, remained there a few hours and departed. Next day five British and neutral vessels were sunk in proximity to American waters. So the losses continued but still Germany's hated foe had not been brought to her knees, had not been starved, and had not sought for peace.

After three or four months' consideration Germany determined to force the submarine issue. She announced that, beginning on February 1st, 1917, merchant ships bound to or from allied ports would be sunk without warning. The prohibited zone for such merchant vessels bordered Holland, Britain and France, and included portions of the Mediterranean Sea. In these areas of the high seas any vessels of any nation from any port would be sunk without warning by German submarines. This notice from the German Empire burst upon the world with startling suddenness. It produced a prodigious sensation and was recognized everywhere as the most momentous development since the initial declarations of war thirty months before. It was also indicated that the struggle was entering a new epoch of frightfulness.

Thus Germany entered on the third phase of her submarine warfare, which was to be ruthless and unrestrained in its conduct. Her rulers declared that Britain would be starved out by October. The German admiralty announced that they would sink or destroy 1,000,000 tons of shipping per month. They calculated that Britain and her Allies had ten to twelve million tons of shipping which they could use to bring food, raw material, and the finished products of war to their ports. It seemed clear to Admiral von Tirpitz that the unrestrained use of the submarine would force Britain to sue for peace. He assured the German people that there was no likelihood of failure if the submarine were ruthlessly employed. But fail it apparently did for we have the assurance from the First Lord of the British Admiralty that the submarine is "held". He did not say that the submarine was conquered but he maintained that the menace was being met through the sinking of submarines by the British navy, by the new tonnage that was being rapidly constructed, and by the seizure of German vessels in Allied ports. At the beginning of the war in August, 1914, Britain had 16,841,000 tons of shipping. On February 1st, after three and one half years of submarine destruction there were 14,091,000 tons left. He also stated that Britain was sinking or destroying, on an average, 38 submarines a month, and that Germany was building approximately, on an average, about 23 a month. So in three and a half years the net loss in tonnage is less than that which Von Tirpitz claimed would be sunk or destroyed in three months. The First Lord of the British Admiralty also stated that in a month Britain and

America would be building as much tonnage per month as the German submarines were destroying and in three or four months they would be building much more and so decreasing the net loss.

How has it come about that the submarine has been "held" despite the predictions of Admiral Von Tirpitz and his followers that Britain, their hated foe, would be brought to her knees? He cheered the German people with the hope that if submarine warfare were resolutely waged, it would be impossible of failure in its mission. Yet it *has* failed and its failure has been due to that deep affection for the sea and all that pertains to it, which has for so long characterized the British nation. Her sailors have devised a hundred measures, so ingenious, so resourceful, so unforeseen that numbers of the merciless raiders and their crews have vanished.

Although very little definite information has been given as to the number of submarines the British have captured or destroyed, or as to how many submarines the Germans still have at sea or in course of construction, something has been told of the many devices that are being used to overcome the menace.

The first successful device employed was the use of nets, drag-nets, curtain-nets, and floating nets. The drag-nets were stretched between two vessels some little distance apart, and as the ships steered their course in a parallel direction submarines were caught in the netting. Here they were held for a time, or bombs were dropped on them to destroy them. But inventive genius is quickened by necessity, and so the Germans devised a means of cutting the net and extricating themselves. However, though they claim that this cutting device is successful, they seem to avoid encounters with nets whenever possible. For it is a fact that no submarine equipped for backing itself through curtain netting has invaded British harbours where vesssels are riding at anchor.

Convoying has been recognized from the first as a great means of protection. But it is evident that the convoying destroyer or other armed ship, if simply moving along abreast of its charge, shares the same danger from waiting submarines. What is called "stationary convoying" is now considered much more effective. This means that large areas are policed by patrols, into and through which the ship moves on its voyage comparatively protected. This means of defence will likely be increasingly used.

The arming of merchantmen has been another method of meeting the menace of the submarine. But it has not insured absolute safety because the U-boat can operate without showing its periscope, and also because a great many of the merchant captains have been over-confident and have not taken such ordinary precautions as changing their course, using speed at the right time, concealing themselves at the proper time with their smoke screens, and putting out their lights.

The smoke screen, which was developed by the United States navy, has probably been the best protection for a ship in actual danger of attack from a U-boat. By this means concealment is given quickly and effectively. In most cases the screen is thrown out by the convoying craft but a means has now been devised of equipping merchantmen with this protection in a practical and economical way.

Of all the agencies employed to battle with the submarine, the destroyer has proved the most effective, and one of the handiest tools of the destroyer is the depth bomb. Many U-boats have fallen victims to this bomb. Of course, the destroyer has other weapons which the submarines fears—her speed and flexibility which makes her a most difficult target for a torpedo and which also enables her to ram a submarine that comes incautiously to the surface, as well as her deadly guns and picked gunners. These perils the submarine can avoid by diving under water, and once there she is comparatively safe, or was until the depth bombs were used. Now it may be confidently said that if a destroyer can locate a submarine's position under water she can be destroyed almost as certainly as though she were on the surface and a four-inch gun were trained on her. It matters not how deep the submarine may sink; even if she rests on the floor of the ocean, the depth bomb will follow her down and destroy her.

There are many other devices used to meet this death-dealing and destructive craft, such as the hydroplane, the aeroplane and the dirigible. Now all that is necessary is a reliable detectaphone to locate the submarine accurately; when this is forthcoming the end of the submarine menace will be in sight.

In the meantime Germany will continue to build submarines and despatch them with fierce energy. She will take her toll of shipping, hundreds more will be done to death, but it will all prove a delusion; and then will come the reckoning. For the sake of victory Germany bade farewell to honour and nobility and generosity. The terrible accusing finger of humanity will ever point to the hideous record—innocent freights of women and children, unoffending and defenceless fishermen and holiday-makers, non-combatants, citizens of friendly states, all murdered. Her submarine warfare has been a crime against nature, against human necessity, against human life, and against civilization. Germany will surely desire to blot out this and other chapters she has written from the world's book of remembrance and she will not be able, for

> The moving finger writes and, having writ,
> Moves on, nor all your piety nor wit
> Can lure it back to cancel half a line,
> Nor all your tears wash out a word of it.

The War in the Air

(Continued from the February issue)

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II. TYPES OF AIRCRAFT.

Aircraft may be divided into two classes, "airships" or lighter-than-air machines and airplanes or heavier-than-air machines. All "airships" consist of a gasbag containing some gas—generally hydrogen—lighter than air, which by displacement of an equal volume of air gives a flotation, the magnitude of which is determined by the kind of gas, the size of the gas-container and atmospheric conditions. It is a harnessed, elongated bubble fitted with steering apparatus and propelling mechanism.

Airships are constructed mainly in three types, "rigid", "semi-rigid", and "non-rigid". Each type has its own peculiar advantages. The choice of type must depend upon the circumstances under which it is to be employed. There are not many examples of the rigid type. The most important is undoubtedly the zeppelin. Imagine seventeen huge wheels with tires and spokes of aluminum united by longitudinal trusses of the same metal, thus forming seventeen compartments, each of which contains a separate balloon, and it is easy to grasp the construction of the zeppelin. The bursting of one or two compartments does not materially affect the buoyancy of the craft. The aluminum frame is covered with cloth and to the keel are attached two gondolas—one fore and one aft—containing the motors and connected by a covered gangway. The dimensions of individual zeppelins have varied somewhat but a length of 400 to 500 feet and a capacity of 750,000 to 800,000 cubic feet of gas seems to be about the average. The power plant consists of three Maybach motors, placed one fore and two aft, developing about 250 h.p. each, and driving the craft at a speed of 45 to 50 miles per hour. Sufficient fuel can be carried for a continuous flight of 36 hours.

The "semi-rigid" type consists of a gas container held in shape by the internal gas pressure with an additional stiffening keel to which the car and motors are attached. There is only one example of this type—the French "Lebaudy".

The "non-rigid" type consists of a gas container held in shape entirely by the pressure of the gas within. It is necessarily limited in size and is intended for field use only, not for long-range offensive work. Such airships have two great advantages; they are quickly inflated and deflated and they are easily transported. The best non-rigid machines are the German Parsifal and the French Clement-Bayard.

They have a lifting power of 5½ tons and a speed of about 40 miles per hour.

The chief advantages of aircraft that are lighter than air over those that are heavier than air are:

(1) Their speed can be variable. This advantage becomes apparent in cases where they are used both for scouting and for offensive purposes. The airplane scout can only make a dash over the enemy country—though it must be admitted that, in spite of this, most satisfactory work has been accomplished.

(2) They can hover over a certain point; this is a great advantage in dropping bombs.

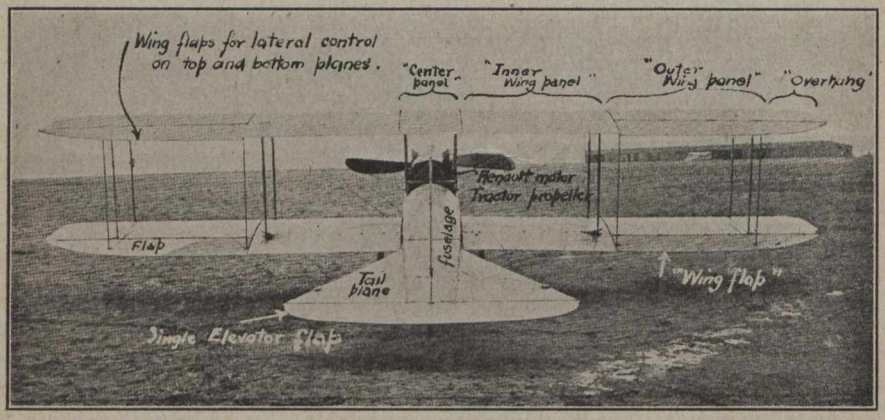

Fig. I.

Rear view of tractor with equal planes and lateral control flaps on both upper and lower planes. From *Military Aeroplanes* by Grover C. Loening.

(3) They can be noiseless. In several of the raids on London, the zeppelins arrived to the north of the city, shut off their engines, and drifted down with the wind. Thus they were able to bomb the "well-fortified suburbs of London" or the "fortified town" of Ramsgate without warning.

(4) Their size and carrying capacity fits them for long-range offensive, making them especially useful for naval work.

(5) They are endowed with great lifting and sustaining power and stability. Thus, if their engines break down, they can remain in the air while repairs are being effected. If an airplane engine "stalls", it can rarely be started again and this means a forced landing, if not a crash.

The principal disadvantages would seem to be:

(1) The resistance of the gas-bag. It is in opposition to science to attempt aerial navigation by pushing such a large surface against the air. It takes only a moderate head wind to make the motive power unavailing.

(2) Danger of fire. Several zeppelins have been burnt, some in mid-air, some in their hangars. This danger arises from the close proximity of the petrol motor to the gas-filled envelope. There is also considerable fire hazard from the electrification of the envelope and ballonets, due to friction of surfaces in contact with the air and with one another.

(3) Difficulties of applying the propellers in an effective position. Zeppelins and all airships are very defective in this respect. The screws are applied to the propulsion of the car, not to the whole system and so the cumbersome gasbag lags behind.

(4) No material has been envolved which will make a gas-proof envelope. All rubber-treated or varnished fabrics disintegrate rapidly owing to contact with the weather and to some chemical change caused by diffusion of the internal gas.

(5) Great cost of airships. It is easy to spend $250,000 on an airship. This amount will build fifty airplanes which would be of much greater military value and would cost much less for upkeep.

(6) The amount of personnel, equipment, and accommodation required for airships. Besides a large and expensively-trained crew, each of these monsters requires 300 trained sappers to attend to starting and landing and to look after the motors, etc. Huge hangars, machine-shops, and inflating machines are also essentials.

(7) Liability of being destroyed by airplanes in war. An airship would be at the mercy of a swift, skilfully-handled airplane. Indeed, early in the war, a French aviator destroyed a parsifal by merely dropping a few jagged stones on the envelope.

Of heavier-than-air machines it is proposed in this article to deal only with airplanes. In distinction to the airship, supported by a buoyant gas, the airplane is supported by an upward wind pressure, generated by its own speed through the air. This lifting pressure is obtained on specially formed wing surfaces which are set at an inclined angle and forced through the air by a revolving screw. Suitable auxiliary surfaces and rudders are used to preserve the equilibrium of the craft and to enable the pilot to steer it. An airplane which is pulled through the air by a propeller situated at the front is called a "tractor". On the other hand if the propeller is back of the main lifting planes, the machine is called a "pusher". The tractor is the most widely used type now, but the pusher still has a *raison d'etre*, especially for gun-carrying. The term *biplane* refers to an airplane with double wings superimposed, and *monoplane* to a single deck type. Very few monoplanes are now used by the warring nations.

Reference to figures 1 and 2 will show the principal parts of modern military tractors. These machines are both two-seaters and have fixed

motors. The pilot and observer sit in tandem seats and control the movements of the machine by foot, hand, and often also by a yoke fastened to the shoulders. Lateral movements are controlled by the "wing-flaps" or "ailerons" which are small separate planes between the main ones. Depressing the flaps on one side causes that side to drag, thus bringing the machine around to right or left. In making a turn, the machine tilts or "banks" to preserve stability, just as the outer rail on a railroad curve is higher than the inner or as a man on a bicycle leans inwards when rounding a corner. Motors are of two types—fixed, as in an automobile, and rotary. In the latter type seven or nine cylinders converge around one axis and the whole motor revolves, forming motor

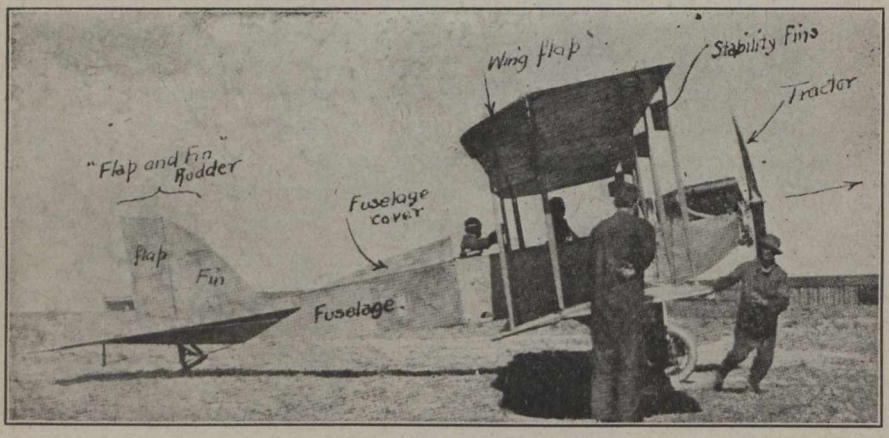

Fig. II.
Tractor with double flaps, high rudder, and fins for directional stability.
From *Military Aeroplanes* by Grover C. Loening.

and flywheel in one and also facilitating cooling. Fighting planes carry one, two, or three machine guns. These guns are connected with the motor and by a synchronising device fire through the blades of the revolving propeller without attention from the pilot, who can give his whole mind to the handling of his plane. This truly wonderful device was the invention of a French aviator, Roland Garros. He was captured with his machine and the Germans promptly stole the idea as they did the Lewis gun at Antwerp.

The tendency in airplanes has been to run to two extremes, for fighting, as small and fast as possible; and for bombing, as large and powerful as possible. Speed is in inverse ratio to wing-spread and, therefore, fighting machines are stable only when travelling at 100 miles an hour or more.

Some of the more famous types of machines may be mentioned but, for obvious reasons, only general information is available on the latest

models. The German "albatross" is capable of a horizontal speed of 187 miles an hour. It is a single-seater and carries three machine guns, shooting automatically and simultaneously through the propeller. The sight of these weapons converges 50 yards in front of the 'plane making the chance of hitting the opponent three times as sure. It is probably the finest fighting machine that has ever been developed in the world, being capable of climbing 15,000 feet in less than twelve minutes. Other well-known German machines are the *fokker*, a copy of the French *Nieuport*, the *walvet* and the *gotha*. The last-named, like the zeppelin, has accumulated notoriety rather than fame as it is the machine used in recent raids on England. France has evolved the *Nieuport* and *spad*; and England has the *Bristol bullet*, the *Sopwith*, the *Vickers' scout*, the *Handley-Page* and the *D.H.9*. The last-named is the best British machine. It has a 455 h.p. Rolls-Royce motor, makes 140 miles per hour, and climbs 15,000 feet in fourteen minutes.

(To be continued.)

Gazetteer of the War

HUGH B. KILGOUR, B.A.
University of Toronto Schools

Petrograd.—Known before the war as St. Petersburg. At the northeastern end of the Baltic sea. Chief Russian port of the Baltic. Magnificent harbour piers formed of granite rock. A great industrial centre: machine shops, iron foundries, cotton and woollen mills. Its strategic advantage is readily seen by reference to a map. Information in profusion can be found in any geography. The struggle between the Kerensky and revolutionary forces centred here.

Dago, Oesel, Moon Islands.—Three important islands of a group lying at the extreme northern point of the Gulf of Riga. They average in size about 20 miles by 10. The natives gain a livelihood by fishing and cattle-raising. Very poor soil makes farming impossible. In October of 1917 the Germans captured these Islands, swept the Russian fleet from the Gulf of Riga, and landed on the Verder Peninsula which they later evacuated.

Brest-Litovsk.—Now famous for the peace negotiations which went on between the Germans and the Bolsheviki ambassadors and which the allies watched with anxious interest. At the confluence of the Rivers Bug and Muskhovetz. About 100 miles east by south of Warsaw. The town has a great trade by river, canal and railway. Population about 100,000. The great Russian retreat of May-October went beyond this point to a distance of some 100 miles. The Germans captured the city August 25th, 1915.

Czernowitz.—In Austria-Hungary on the Pruth river south of Lemberg about 90 miles. Population about 90,000. Figures in the fighting about the Carpathians and the great German and Austrian advance into Russia. One of the starting points of the Russian offensive in 1914, it has been the scene of constant change as first the Russians held it and then the Germans and Austrians took it. Now the Germans and Austrians dominate the whole vicinity.

The Development of the Imperial Conference

(Continued from the March issue)

G. M. JONES, B.A.
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London, 1911.—The period between 1909 and 1911 was one of continued anxiety for the British people. The Liberal programme of social reform had involved the Asquith Government in a bitter struggle with the House of Lords which culminated in the Parliament Act of 1911. The imperialists of Great Britain were much concerned about the naval policies of Canada and Australia, which were laying the foundations of local navies. Abroad the situation was still threatening. Germany had been practically defeated at the Algeciras Conference, but she continued to increase her navy, and was certain to assert herself at the next favourable opportunity, which, indeed, came in July 1911, just after the close of the 1911 conference. On that occasion she sent the gunboat Panther to the port of Agadir, and thereby interfered once more in the question of Morocco. Other countries also were making warlike preparations. Anxious to be prepared for emergencies, they were spending so much money on their navies that the total expenditure of the seven Great Powers of the world on their navies for year 1911 was $629,045,000, an increase of $251,451,000 over the total expenditure of 1901. It was under these circumstances that the regular quadrennial Imperial Conference was held in London in May and June 1911.

Great Britain was represented by her Premier, Hon. H. H. Asquith, who acted as chairman, and Hon. Lewis Harcourt, Secretary of State for the Colonies. Canada was represented by Sir Wilfrid Laurier, Sir F. W. Borden and Hon. L. P. Brodeur. Of the other members of the Conference the more prominent were Mr. Fisher of Australia, Sir Joseph Ward of New Zealand, and General Botha of the new Union of South Africa. Mr. Asquith, in his opening address, reviewed the peculiarities of the British Empire, dwelt on the advantages of the periodical conference at which "we may take free counsel together in the matters which concern us all", and then emphasized the importance of flexibility in the constitution of the Empire. "I am sure we shall not lose sight of the value of elasticity and flexibility in our Imperial organization, or of the importance of maintaining to the full, in the case of all of us, the principle of ministerial responsibility to Parliament".[1]

Two very important matters were discussed, the constitution of the Empire and foreign affairs. The first was brought up by the following resolution, moved by Sir Joseph Ward, Prime Minister of New Zealand:

[1]Minutes of Proceedings of the Imperial Conference 1911, Canadian Sessional Paper No. 208, p. 25.

"That the Empire has now reached a stage of imperial development which renders it expedient that there should be an Imperial Council of State, with representatives from all the constituent parts of the Empire whether self-governing or not, in theory and in fact advisory to the Imperial Government on all questions affecting the interest of His Majesty's Dominions oversea".[1] He was impressed with the necessity of having a better empire organization in order to meet the perils arising from foreign naval rivalry, foreign immigration into the Empire, the policy of local names, and the "yellow peril" which threatened Australia and New Zealand.

The above resolution, which had been forwarded to the Colonial Office in advance, called for the creation of an Imperial Council; but, on the way over from New Zealand, Sir Joseph had altered his plans, and, in a very long speech, really advocated the creation of an Imperial Parliament. There was to be an *Imperial House of Representatives* elected by the white people of Great Britain and the Dominions (220 out of 300 elected by Great Britain); an Imperial Council of Defence of 12 members, 2 from Great Britain and from each of the Dominions; and an Executive Council of fifteen. This Imperial Parliament was to control matters common to the whole Empire and those which could be satisfactorily undertaken only by the Empire as a whole, such as foreign relations and defence. It was to get its revenue by levying contributions on the different parts of the Empire, contributions calculated on a per capita basis, except that for defence the Dominions would pay per capita only 50% as much as Great Britain. The Dominions were to raise their contributions in any way they liked.[2]

Sir Joseph's scheme, the first of its kind to be presented in detail to a Conference, met with a very hostile reception. Sir Wilfrid Laurier objected particularly to the financial proposal. "Now if there is one system which I think is indefensible, it is the creation of a body which should have the power to expend at its own sweet will without having the responsibility of providing for the revenue to carry on the expenditure."[3] Mr. Fisher was of the same opinion; "Sir Wilfred has really expressed my own view". Of all the Dominion statesmen, General Botha expressed most fully his objections. His principal fear was that such a scheme as Sir Joseph had outlined would encroach on the autonomy of the Dominions, and thereby weaken the Empire. "But what are we asked to do now? It would probably mean, I submit, the creation of some body in which would be centralized authority over the whole Empire. Now this would in my mind be a step entirely antagonistic to the policy of Great Britain which has been so successful in the past, and

[1]Minutes p. 40. [2]Minutes pp. 60-63. [3]Minutes p. 73.

which has undoubtedly made the Empire what it is to-day. It is the policy of decentralization which has made the Empire—the power, granted to its various peoples, to govern themselves. It is the liberty which these peoples have enjoyed and enjoy under the British flag which has bound them to the Mother Country. That is the strongest tie between the Mother Country and the Dominions, and I am sure that any scheme which does not fully recognize this could only bring disappointment and disillusionment. I fear that the premature creation of such an Imperial Council as is suggested would—rather than bring the different parts of the Empire closer together—tend to make the connection onerous and unpleasant to the Dominions. Let us beware of such a result. Decentralization and liberty have done wonders. Let us be very careful before we in the slightest manner depart from that policy. It is co-operation and always better co-operation between the various parts of the Empire which we want, and that is what we must always strive for."[1]

Mr. Asquith, on behalf of the British Government, said that the existing Imperial Government could not share with any other body its responsibility for the conduct of such important matters as "foreign policy, the conclusion of treaties, the declaration of maintenance of peace, of the declaration of war". Moreover, he urged that the Dominions would not wish to run the risk of having measures forced on them by a body in which they were in a minority.[2] The opposition to Sir Joseph's scheme was so strong that he withdrew his resolution. He had presented his case very badly, but his failure was due primarily to the fact that centralization had no friends in the Conference except the representatives of New Zealand.

The question of foreign affairs received a great deal of attention at this Conference. At the 1907 Conference the representatives of Australia and New Zealand had vigorously attacked the policy pursued by Great Britain in connection with the New Hebrides, and Sir Robert Bond of Newfoundland had objected strenuously to the *modus vivendi* arranged with the United States in connection with the Newfoundland fisheries; but in 1911, for the first time, all the Dominions joined in a definite demand for some voice in foreign affairs. The Government of Australia had sent in a resolution regretting that the Dominions had not been consulted prior to the acceptance by the British delegates to the Hague Conference of the terms of the Declaration of London, and objecting to certain articles of the Declaration. With one exception, the Dominion representatives supported the claim of Australia to be consulted, and the British Government promised through Sir Edward Grey that in future the Dominion Governments would be consulted in con-

[1]Minutes p. 74. [2]Minutes p. 76.

nection with the negotiating of international agreements affecting the Dominions "where time and opportunity and the subject matter" permitted. In connection with the articles of the Declaration of London which had been challenged by Australia, Sir Edward urged that they marked a distinct advance in international law and ought to be accepted.[1] The Conference concurred in his view.

At a meeting of the Committee of Imperial Defence the members of the Conference listened to a general exposition by Sir Edward Grey of the foreign policy of Great Britain and the state of international relations. For the first time Dominion statesmen were admitted, as Mr. Asquith put it, "into the interior, into the innermost parts of the imperial household".[2]

Many other matters were discussed, but they were dwarfed in importance by the two already mentioned. No progress was made in the attempt to give the Empire a more centralized government, but with regard to foreign affairs a great change had been brought about. From this time on Dominion statesmen were to be admitted, at least periodically, to the secrets of the British Foreign Office, and they were to be consulted whenever possible about international agreements affecting the Dominions. At the closing session of the Conference, Mr. Fisher expressed thus his view of the work accomplished: "I believe what has been done at this Conference has laid a foundation broader and safer than has ever hitherto been the case. I believe that the people do not yet fully understand what has taken place at this Conference. Hitherto we have been negotiating with the Government of the United Kingdom at the portals of the household. You have thought it wise to take the representatives of the Dominions into the inner counsels of the nation and frankly discuss with them the affairs of the Empire as they affect each and all of us. Time alone will discover what that means. I am optimistic. I think no greater step has ever been taken, or can be taken by any responsible advisers of the King."[3]

[1]Minutes pp. 109-120. [2]Minutes p. 454. [3]Minutes p. 452.

(*To be continued*).

Pseudopedagogy

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IT is a question whether we are not making of the work of teaching a more involved and intricate process than it has any need to be. The idea prevails that simple, straightforward instruction should be given very little place in the classroom. In this respect teaching in

the school is sharply differentiated from teaching on the playground and everywhere else. Elsewhere children's questions, for instance, are answered simply and directly if they can be answered at all, and their difficulties met and overcome front on; but in the school questions are met with counter-questions, and problems attacked from the rear by devious by-paths. In attempts to "rationalize" processes, "develop" lessons, and "draw out" the pupils, the work of the teacher becomes indirect, complicated, and academic. The worst difficulties of teaching are mainly school-made and artificial.

This tendency to hedge the work of teaching about with difficulties can be traced, of course, to the disciplinary conception of education as primarily a process for the development of general mental power. But during the last few decades we have been coming to think that, in spite of all the disciplinary agony of long division and quadratic equations, what we really acquire during our school days is not so much general power as specific abilities. Without going so far as to hold that education has no disciplinary effect on the mind in general, we still cannot ignore the evidence in favour of the highly specific nature of the learning process. To do this would be deliberately to turn our backs on the general trend of educational thought during the last half-century.

There has, however, as yet been practically no change in the practice of teaching to correspond to this changed point of view in educational theory. We still go on "rationalizing" and "drawing out" and all the rest of it for all the world as though the mental salvation of the pupils depended on this sort of thing. Now in teaching, say, multiplication, about the only thing we can be quite certain we are doing for the pupils is that we are teaching them how to multiply. In "long multiplication", for example, each succeeding partial product is set over one place to the left. But how many teachers would be so unpsychological and unpedagogical as simply to show their pupils how to *do* this? True, we could teach just multiplication in this way very easily, but we are not teaching just multiplication, we are *training the mind*. And so the whole process is put on a units, tens, and hundreds basis, and what a hocus-pocus of trouble we have on our hands. For days and weeks the poor youngsters repeat back to the teacher a "rationalization" which probably in most cases means just about as much to them as Hebrew to a Chinaman; until, finally, observing by some chance where the first figures of the partial products really go, they proceed to multiply in this way for the rest of their lives.

It is the same everywhere in arithmetic. The whole subject is pedagogically top-heavy. So much attention is given to the way arithmetic should be taught that very often the subject itself scarcely gets taught at all; and, if it does, it is only by an expenditure of time and energy out

of all proportion to the inherent difficulties involved. Why continue to load down such mere tools of knowledge as the fundamentals of arithmetic with the whole burden of mental discipline? The crux of the matter is that many of these processes have to be mastered before the pupils can possibly grasp the significance of the operations in the adult sense. Why not teach these operations just for their own sake and let the demand of the pupils for the why and wherefore determine which of them should be rationalized in any given grade and which should not?

But the real test of skill comes when the teacher sets forth to "draw out" of the pupils the very things which she is supposed to teach and which they are not supposed to know. This is done, of course, by questioning. Now if the questions are put with sufficient skill and if the teacher is persistent enough the chances are that a pupil may be found who had learned the fact out of school or in another room. Then this pupil tells the others. It is apparently considered better teaching to spend almost any length of time and to "draw out" scores of wrong answers on the mere chance of finding a pupil who can tell the class than for the teacher to tell the class. The idea seems to be that for the teacher to give the information would have a bad effect somehow on the "minds" of the pupils. It does seem a little remarkable that it is only professional teachers who have this bad effect on people. Children at home learn with great rapidity how to say and do all sorts of things from parents who just tell them or show them how in the most direct way possible. And what surprisingly fine condition their minds are in when they come to school at six! Again, after we leave school, when we want to find out how to do a thing we go to some person who knows more about it than we do and get him to show us how. No pedagogy about it. What would you or I say to an art instructor or a music teacher who would collect a dollar an hour and spend nearly his whole time reducing to law and order those Herbartian "ideas" of ours bobbing up and down somewhere in our apperceptive mass?

"On your life don't *tell* the pupils anything," I overheard, just the other day, a youthful enthusiast exhorting a still more youthful aspirant for pedagogical honours. And what, in fact, could be more depressing than one of those dreary monotonous "telling" lessons? Nothing I can think of unless it is a pointless, meaningless, "questioning" one. Let us suppose it is a lesson in hygiene. The topic is the proper care of a fainting person. After a few introductory queries to get those "ideas" well stirred up comes the main question: "What do you think ought to be done when a person faints?" Now it may be that one of the pupils has a pretty good idea what ought to be done. If so he tells the class. No great harm comes of it either. If he is asked why he would do thus and so and if he knows why he tells the class this

also. Still no irreparable damage. This pupil might even go so far as to give the class an objective demonstration of how he would handle the situation. The teacher congratulates herself on her teaching ability and votes the lesson a complete success.

But what if no pupil in the class has any idea what ought to be done? Would it be permissible for the teacher to take the place of this hypothetical pupil? Not by any manner of means. This would have a most disastrous effect on the mental development of the whole class. "On your life don't *tell* the pupils anything." And so she urges her question and waits for an answer. Finally some venturesome pupil hazards as a pure guess: "Take off your coat and put it under his head." And just here the "pedagogiste" comes into her own. Volleys of questions are poured into that unfortunate pupil,—the appearance of the face?—the cause of this appearance?—the effects of gravity? etc., etc. She twists and squirms; she drives at the subject from the front and the rear and the left and the right, from above and from below. This is the "Socratic" method, by the way. Poor old Socrates! If ever any man was disturbed in his grave by the perversion of his theories Socrates must be having a decidedly uneasy time of it. However, the pupils finally get a suspicion that there was something wrong with that suggestion about the coat. The point is gained and another triumph is scored to the credit of the fine art of pedagogy.

There is no gainsaying the fact that there are teachers who get remarkably good results from this method of teaching. These are mainly teachers of considerable training and experience with possibly a few others who have a natural turn for pedagogical gymnastics of this sort. It requires a high degree of skill and the best of judgment. But the great majority of our teachers, especially in the rural schools, are young girls who, after a meagre four months' Normal training, begin to teach when they are from sixteen to twenty and remain in the profession, on an average, perhaps two or three years. It is clearly absurd to expect these young people to do anything involving a high degree of professional skill. To attempt this invites disaster. By nature, training, and experience, most of these teachers are qualified only for unskilled labour. No parents, playmates, social or business associates so lacking in teaching ability but we learn from them probably far more on the whole than we do from our teachers with all their pedagogy. And think of what we learn from books and how hopelessly unpedagogical they are, especially those we like to read! Try to imagine Darwin setting out to teach the whole world the theory of evolution by the Herbartian method! Not inherent difficulties in teaching but a smattering of pseudoscience is the chief source of danger to the young teachers in our small rural schools.

Rural Teachership

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Craigmyle, Alberta

THE realities of the educational situation in many rural districts constitute a sort of trench warfare. Reports of an occasional raid or aeroplane success serve to maintain the morale but do not greatly affect the general situation and now even the barrage attack—the convention—is suspected of having its limitations. The few illustrations from a teacher's experience that are included in this article are proffered as suggesting a simple method of securing a certain unity of allied effort in the struggle.

Two sentences from the pen of Dr. Coffin crystallize the difficulties under consideration. "It is surely illogical to expect the occupant of a position to rank very highly in the community so long as the position itself is held in such low esteem. . . . Only a resident teacher of ripe experience and strong personality can take the lead successfully in most of our rural communities."

The problem is very largely a financial one. It is solved if we can create a class of resident, qualified, and cultured teachers who will have reason to blush neither for their economic status nor for the limitation of their opportunity for service *along the lines of their profession.* In a campaign for this and other reforms we can enlist the aid of an ally whose equipment for service and whose capacity for co-operation is rapidly improving.

In Alberta some sixteen thousand farmers are united in an association which is mainly concerned with self-education and community welfare. This is the United Farmers of Alberta and while space does not allow of our enlarging upon its history and importance, we may regard the U.F.A. as being an educational machine.

For some time this organization has been trying to solve some of its own problems by providing, for each local branch, an income out of which a salary of some hundreds of dollars might be paid to the local secretary. In return for this payment serious demands would be made upon that official's time and energies but measurable results in community service would be obtained.

In most cases, however, such demands would not be other than could easily be met by a resident teacher. They might include the calling and direction of meetings, the preparation of a few lectures, the collection of local statistics, correspondence, organization of social events, and the

administration of some co-operative enterprise requiring clerical work, such as hail insurance or the purchase of some agricultural items on a community basis. If there is a teacher in these farming provinces incapable of doing these things and correlating them with his school work then his certificate is just as much camouflage. Efficient services of this kind are more professional than some of the class-room work and so long as they are conducted strictly on a community basis these activities will call forth an understanding and respect where studied attempts at "leadership" would only appear mawkish and unfruitful.

If only a proportion of Alberta's five hundred U.F.A. locals adopted this scheme there would be a new outlook for rural teachership. The position would demand a resident teacher, certificated, practical rather than "bookish", and worthy of his hire. He who regarded a rural appointment merely as a stepping stone to the heights of teeth-pulling or grocery supervision would have to "step lively" indeed. War veterans with scholarship, men and women with organising ability, and more serious students generally would enter the Normal Schools and there would result an appreciable narrowing of the gap that lies between the school patron and the school machine.

My advocacy of the community school is strengthened by recent observation of the work of a resident teacher whose situation is almost exactly such as I have defined above. With his permission I shall sketch briefly the features of his work that bear interest in this connection.

Mr. K's school is twelve miles from town in a part-foreign district. When first appointed he encountered an unpainted, ill-equipped school with seven acres of unfenced ground. The atmosphere still smoked with the fury of the feud that had raged around his predecessor. The trustees, who were bachelor homesteaders, built a house for Mr. K. and his family. The latter has now repaid half of its cost in rent. The buildings are painted, the grounds fenced, the school well-equipped and each season the school garden increases its area and its usefulness.

The advantages of the residence to the tenant are obvious but the community benefits still more. Property is constantly under supervision and repairs are easily effected. In winter the official janitor is forestalled by an hour and a warm schoolroom greets the first arrival. This enables K. to conduct school about one-fifth more of the time in winter than his fellow-teachers who serve in isolated schools with tardy janitorship.

In the evenings he has convenient access to the books, maps, and blackboard for study or preparation. Sometimes, to spare the daily time-table, he takes High School work in the evenings and can accomplish this without any hardship.

A hot lunch is ready every noon and for this the residence stove is used. Mrs. K's association with the pupils in this activity and in games, etc., is a feature much appreciated by the community, while the repair and Red Cross facilities of the home are a source of comfort to the pupils. One third of the attendance is of foreign parentage and there are retarded pupils on the roll but the department reports on the school are exceedingly favourable. K attributes the credit for this largely to the fact that the comforts of his situation permit him to plan out his work.

In the residence is maintained a local library, a university extension library, and certain of the neighbours club with the teacher in securing an assortment of authoritative newspapers and reviews.

U.F.A. and other community meetings are held in the school. Often a parallel meeting is conducted by the womenfolk in the residence at the same time. Refreshments are provided on the slightest provocation. On the occasion of social events, patriotic concerts, and so forth, the teacher's house is very much in use. Mothers who would otherwise remain at home rather than expose their children to unhygienic conditions establish a crèche in K's house. As many as a dozen infants are "checked" there sometimes, while their parents enjoy the "doings" freed from anxiety. As a result social events in that district are well attended. K's school holds the rural record for a single patriotic event. A sum exceeding five hundred dollars was collected in one hour on a recent evening for Red Cross and other objects.

This is a condensed and very "sketchy" recital of K's community work but, as he himself declares, the realities are sketchy and experimental. No picture of Utopia is intended and if what has been outlined is hardly worth reaching for it is at least within reach. On the financial side K's status is from twenty to thirty per cent. better than if he depended solely on his teacher's salary. This increase comes to him as he sits at his desk and co-operates with the progressive element in the community.

With the increase of material comfort there comes an increased respect and effectiveness. His school patrons are therefore securing something of considerable worth at no cost save an adjustment of burdens already being carried.

Johnny B, who has seen eight summers go by, not very long ago developed a fondness for playing "hookey" from school. After two or three offences of the kind he was taken to task by his teacher.

"Johnny," she said, "the next time you are absent I want you to bring me an excuse from your father telling me why you were not here." "I don't want to bring an excuse from father," protested the boy. "Why not?" asked the teacher, her suspicion plain. "'Cause father isn't good at making excuses. Mother finds him out every time."

Manual Training and Household Arts at Riverside School

CLIFFORD W. FAIRN,
Director of Technical Education, Calgary

MANUAL training and household arts have been established features of the Public School course in Calgary for many years. A well-organized course in manual training has been given in grades I to VIII; in the first four grades this is known as primary handwork. Boys and girls receive the same training up to grade V, when the boys take up bench work and drawing, and the girls sewing. During the past two years very satisfactory teaching of sewing has been carried out by the teachers of grades V and VI, although in some cases the sewing in grade VI is still given by a special teacher. Eventually all sewing in grades V and VI will be taught by the grade teachers. The girls of grades VII and VIII receive one lesson per week in cookery.

Could conditions be assumed equal in all districts of the city, the courses outlined would be quite satisfactory, but in a growing city like Calgary, with its large foreign population, conditions vary widely in the different districts. This is particularly true of the section served by Riverside School, where two years ago 65% of the pupils were of German parentage, and over 60% of those in attendance at the main building and the bungalow adjoining, owing to lack of opportunity and foreign birth, could be classed as retarded pupils. The Riverside School is an eight-roomed stone building with a four-roomed bungalow school adjoining, and the two are classed as one school. The records of the school showed that a large majority of the pupils left school at fourteen years of age to assist in earning a livelihood, and the problem which presented itself to the Board was how to provide the most useful training to these particular pupils in the short space of time spent in school. With this in view a committee composed of the Superintendent of Schools, Principal R. Massey, B.A., of the Victoria Prevocational School, Mr. S. Y. Taylor, Principal of the Riverside School, and the writer of this article, was asked to make recommendations dealing with the Riverside situation. After dealing with the situation in general the committee made the following recommendations:

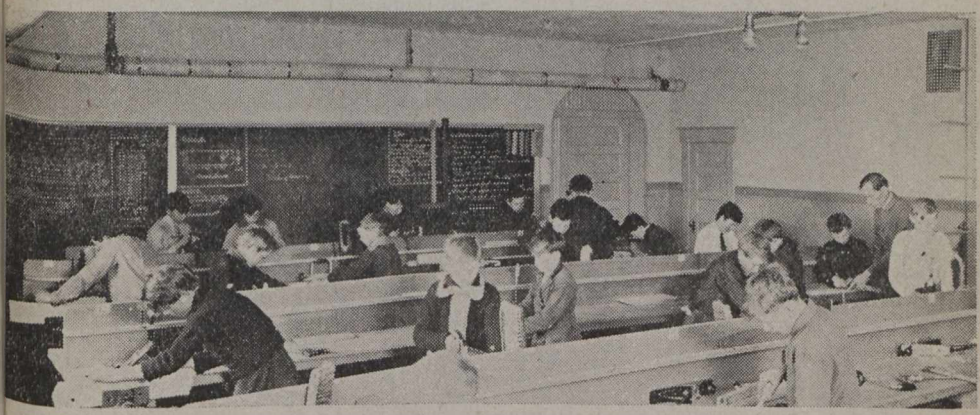
1. That the course in spelling in grades IV and V be revised and made more practical.
2. That greater emphasis be laid upon speed and accuracy in the four elementary rules of arithmetic and less time spent on the solution of problems on the compound rules.
3. That no formal grammar be required for grades IV and V.

4. That the course in geography be modified so as to consist of the essentials necessary to the making of Canadian citizenship.

5. That the two basement rooms of the large school be equipped for the use of boys' classes in drawing and woodwork, and girls' classes in household science, sanitation, care of children, etc.

6. That two special teachers, one in manual training and the other in domestic science, be appointed to teach these and allied subjects, and to take charge of the physical exercises of both girls and boys.

Owing to the necessity for economy it was decided to start with simple equipment and no attempt was made to carry out the formal layout of the manual training and household science centres of the other schools.



Manual Training Room, Riverside School, Calgary

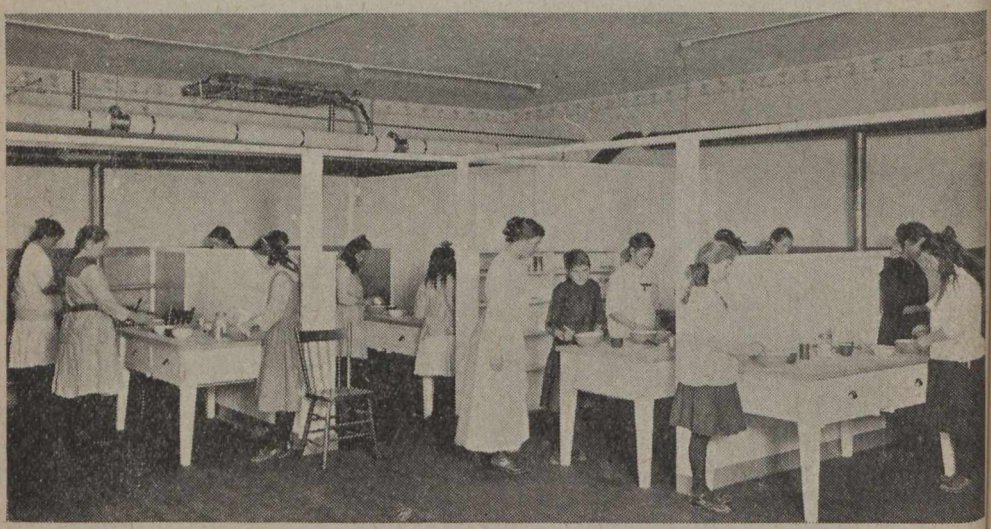
With the view of approaching home conditions as nearly as possible the household science room was fitted up with six kitchenettes, each accommodating four pupils and provided with a small gas range, sink, table and cupboards. As shown in the accompanying photograph, each group is under the eye of the teacher, yet working independently. The care of the range, sink, table, and cupboards is divided up alternately among the four girls of the group and practical working conditions are ensured. Miss Lilian Archibald, the teacher in charge, is quite enthusiastic about the layout and equipment and a visit to a class at work would satisfy the most skeptical.

In the case of the manual training, it was found that the cost of individual work benches imported in the usual way would be prohibitive and it was decided to construct four work benches, accommodating six pupils at each bench. These benches were built of B.C. fir and equipped with rapid-acting vises, tool racks, bench dogs, and so forth. Mr. G. D.

Martin, the present Principal of the School, gives the instruction in manual training and is well pleased with the working of this arrangement. A complete and first-class outfit of woodworking tools is provided and with the exception of not having individual benches the equipment is equal to our best manual training centres.

All pupils of grade III over ten and a half years of age are taking either manual training or household arts. In grade IV, those of eleven years of age and older are given instruction in those two subjects. Cooking has not yet been given below grade V. The girls of grades III and IV receive two sewing lessons per week.

Some weeks after these subjects had been introduced the Principal, teachers, and pupils were "at home" to parents. Prior to this time



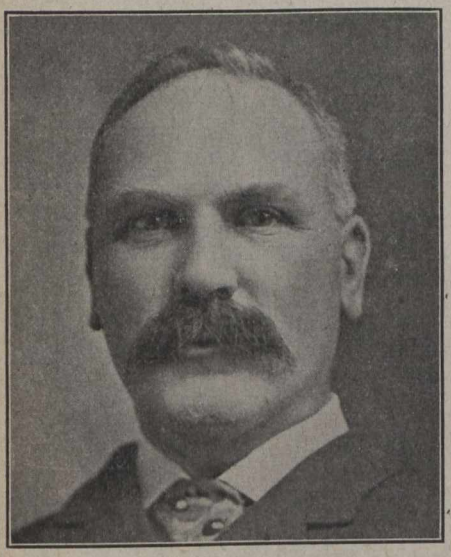
Household Science Department, Riverside School, Calgary

efforts to interest parents in the activities of the school had met with very little success. On this occasion over three hundred parents presented themselves and seemed to be delighted with the opportunities afforded to the children for practical work.

It is the intention to extend the scope of the work in manual training to include metal work and, possibly, shoe repairing and it is probable that the timetable will be arranged to allow for more than two lessons per week in manual training and household arts. From present indications this may be done without affecting the grading examinations adversely.

At this date the experiment seems to be a pronounced success both in arousing the interest and enthusiasm of the boys and girls in school work and also in encouraging pupils to remain longer in school.

Leading Manitoba Educationists II.



HON. DR. R. S. THORNTON.

HON. Dr. Thornton, the Minister of Education for Manitoba, is probably as progressive a man as Canada has produced in many years as head of an educational department. His work with the Public Schools during the past three years has been all but marvellous. Whilst he has shown wholesome aggressiveness, his attitude at all times has been one of sympathy and understanding. Caution, consideration, and candour are characteristic qualities which when associated with quiet determination and good executive ability make for constructive and successful statesmanship. And these qualities Dr. Thornton possesses. Willing to consider all aspects of a question, desiring to be just, and anxious to have the backing of public sentiment, he nevertheless rarely hesitates to carry out the policies which he decides are best for the schools; and he hews to the line, fall the chips where they may. "The best school for everyone and everyone at school" is the principle at the basis of his educational policies.

Dr. Thornton was born in Edinburgh, Scotland, on May 8, 1863. He was educated at Heriot's Hospital and Edinburgh University, graduating M.B.C.M. Coming to Manitoba in the '80's he has practised medicine in Deloraine since 1884. In his profession he has been a leading member of the Manitoba Medical Council since 1886, was president of the Council for two years, and Vice-President of the Medical Council of Canada in 1912.

Like so many Scotchmen, politics always interested him and he was elected to the Manitoba Legislature as member for Deloraine in 1907. From the time of his first appearance in the House, he has always had the schools as his own peculiar preserve. While the Liberals were in the Opposition he was the critic of the Government's educational policies and then put forth ideas many of which he has since tried out in practice. With the formation of the Norris Government in 1915, Dr. Thornton's opportunity came and when he took over the Department of

Education he began gradually to bring about those changes which he had advocated in the House. Always fair and judicial, he gave credit where credit was due and carried on the work from the point where his predecessors had left it.

If we might single out one point as distinctive in his work, it is this: his insistence upon national English schools for every boy and girl of Manitoba, whatever his race or circumstances. To carry out his policies in regard to the foreign population and the isolated communities he established a new office, that of the Official Trustee, and was exceedingly fortunate in finding a man of rare gifts in Mr. Ira Stratton of Stonewall.

Dr. Thornton has been fortunate in having the heartiest co-operation of the officials in the Department and of the inspectors. A large measure of his success as a Minister has been due to his ability to inspire enthusiasm and confidence. E. K. MARSHALL.

Nature Study for April

PROFESSOR G. A. CORNISH, B.A.
Faculty of Education, University of Toronto

FOR THE FIRST FORM—*The Pussy Willow.*

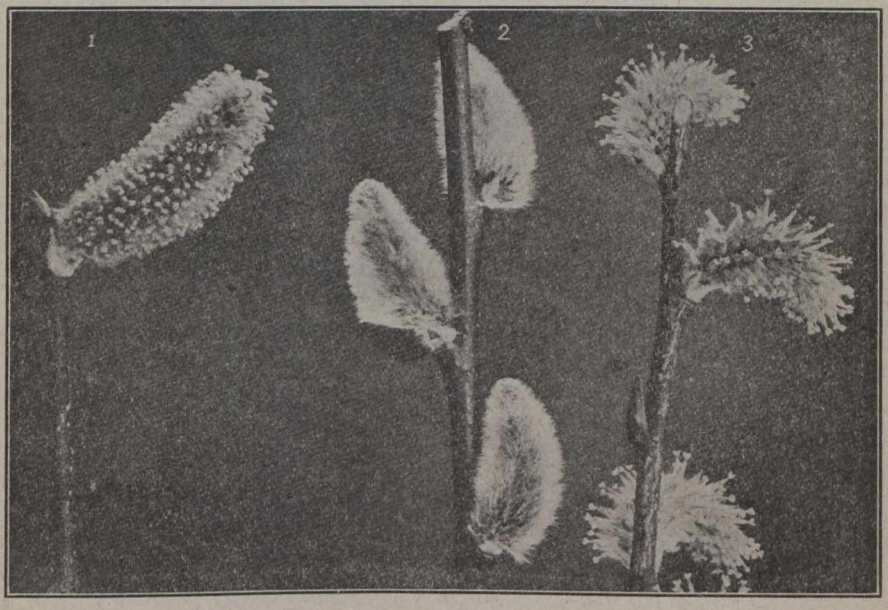
For the Teacher.—This is a favourite topic for nature study and yet how little some teachers really know about it! The twigs with the pussies are found in March and April. They grow on a small, diffuse tree or shrub, which grows in moist locations. The pussies are really the flower clusters and, if they are gathered when mature, the stamens with their yellow antlers are plainly visible to the keen eyes of the pupils of the first grade.

This swamp willow is what the botanists call *dioecious* which means that it has two kinds of flower clusters on two *different* trees. If the teacher who gathers the pussy willows will observe carefully, it will be noticed that on some trees the pussies are not nearly so hairy as on others; those that are most hairy produce stamens, the others produce the pods containing the seeds. Both should be studied by the pupils. When the pussy willows are first pulled they are dark-coloured, but as they mature they become quite yellow as the stamens with their yellow antlers push out of the scaly covering. If the trees are visited on a sunny day, when they reach this mature condition, it will be observed that swarms of honey bees are visiting them, attracted by the mass of yellow colour, and no doubt by the smell of nectar, which abounds in little cups deep down among the hairs.

At the end of April the pussies of the stamen-bearing trees are all withered, but those of the seed-bearing trees are much enlarged and composed of green pods, the hairy covering now being much less prominent. By June these pods have ripened and the seeds, like little tufts of cotton, are being carried away by the wind.

The plant does not need seeds for purposes of reproduction, since wherever a twig touches moist ground it will send down roots and begin growing.

Work by the Pupils.—Have the pupils bring bottles from home and put some twigs of pussy willows, both stamen-bearing and pistil-



1. Mature staminate flower. 2. Immature staminate flower. 3. Mature pistillate flower. From *The Tree Book* by Julia E. Rogers. Doubleday, Page & Co.

bearing, in each bottle. If these are placed in a sunny window, they will continue to grow and the pupils can see all the stages of growth until they turn yellow as the stamens mature. Probably many of the twigs will send down roots into the water. In the first class only the simplest facts can be observed.

FOR THE SECOND FORM—*How the Squash Seed Gets Out of Its Skin.*

For the Teacher.—The seeds of the squash and pumpkin consist of a tough *seed coat* and a softer kernel or *embryo*. The seed coat at the pointed end has a scar, which is the place where it was attached to the wall of the fruit. The embryo consists of two halves which separate quite readily but are united to a small median part at the pointed end.

The small median part is the sprout or *radical*. If the seed is placed in water it becomes mucilaginous; and if the moist seed is left in contact with any object it adheres, when dry, very closely to that object. This characteristic serves it well when it begins to grow, because the seed coat adheres so firmly to the earth that the young plant, in its endeavour to get out of the coats, is not likely to carry them with it. If it did, it would not have room for expansion.

If squash or pumpkin seeds are placed *on* moist soil they will germinate very well. The whole process can be watched very easily and proves extremely interesting. Figure 2 shows the steps in the process. First, the coat at the pointed end splits open and the sprout grows out. Immediately on emerging, it bends at right angles and enters the soil

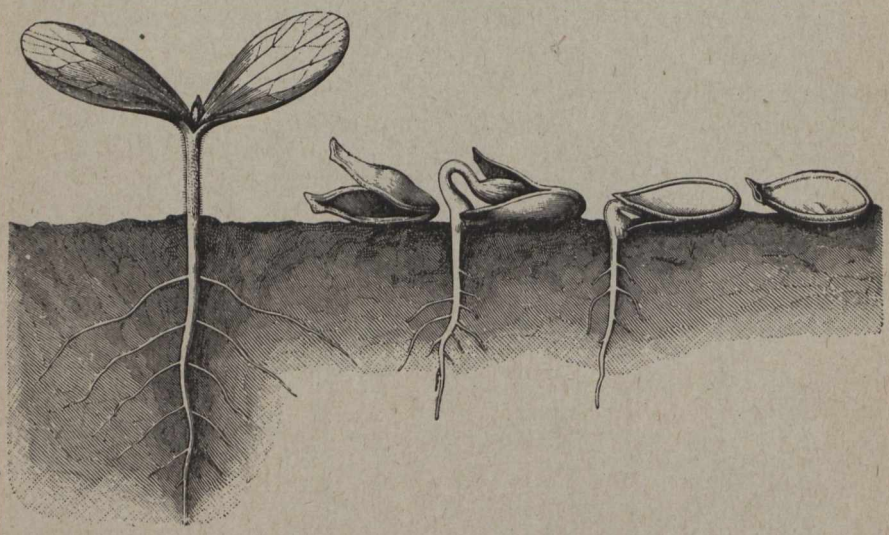


Fig. 2, Germination of the seed of the squash, showing four successive stages, from right to left. From *The Natural History of Plants* by F. W. Oliver. Blackie & Son.

Then a most remarkable growth takes place from the side of the vertical part of the radical. A peg-like lump grows out and fastens itself like a hook on the lower half of the seed coat at the end where it split. This serves to pin the lower half of the seed coat to the ground, while the greatly enlarged embryo pulls itself out of the seed coats. Before the embryo actually emerges, the stem sends up a loop. If the seed were under ground this loop would be the first part to appear above the soil. Then quite suddenly the looped stem straightens out, the embryo is pulled out of the soil and the little seedling is complete.

Practical Work for the Pupils.—(1) Let each pupil moisten the seeds of various vegetables such as cucumbers, tomatoes, squash, beans, radishes, etc. Lay them, while still moist, on paper, and when they

become dry observe which adhere to the paper. (2) Soak the seeds of the pumpkin or squash in water for twenty-four hours and then examine their structure. (3) *On* the surface of moist earth in a box press down eight or ten squash seeds. Cover the box with glass to keep in the moisture, and observe all the stages of growth depicted in the above drawing.

FOR THE THIRD FORM.—*Use of a Flower.*

For the Teacher.—The pupil should be led to see that all plants and animals strive to accomplish two things, viz., the welfare of the individual plant or animal, and the welfare of the species. The first process is called *growth* and the organs are concerned with it called the *vegetative organs;* the second process is called *reproduction* and the organs concerned with it are called the *reproductive organs.* The vegetative organs of the plant are the root, stem, and foliage leaves, and the reproductive organs are the flowers, each of which is composed of flower-leaves. As these flower-leaves have various functions to perform, they have different forms and structures. They are always collected together in a cluster at the end of the stem, the cluster being called a flower. The outer circle of leaves in a flower is called the *calyx.* This forms a protective covering around the more delicate organs within before the flower bud opens. It protects these inner parts primarily from dessication, for they have no impervious cuticle and would dry up on account of evaporation, if it were not for the protective covering. The calyx-leaves often have coarse hairs on them or are deflected back in order to prevent depredatory insects, such as ants and beetles, from climbing up to pilfer the nectar or pollen. The second circle of leaves is called the *corolla.* This is usually the showy part of the flower. It is intended to attract insects so that the pollen dust will be properly transferred; if this is not done, the seed will not develop. As soon as the pollen has been transferred and the seeds begin developing, the corolla withers and drops off because its work has been done. Within the corolla is a circle of leaves—the *stamens.* As their function is to prepare and store *pollen,* they differ greatly in shape from the other organs of the flower. Usually they have a lower hairlike stem with a sack on the top of it. The sack contains the pollen while the stem or *filament* raises the sack up to where it will be most accessible to bees and other insects. As soon as these stamens have shed their pollen, they wither and die. The inner organs of the flower are the *pistils,*—sacks containing structures which are going to form seeds. At the top of each pistil is a sticky structure, call the *stigma.* The pollen is carried to the stigma by bees and it stimulates the pistil, so that the seeds develop. The seeds tide the plant over the winter and thus preserve the species.

Work for the Pupils.—The teacher should distribute to the class flowers of the hepatica, blood-root, or any other simple flower, and the flowers should be dissected with the purpose of pointing out the facts mentioned above. The unopened buds should also be examined.

Review Work in Geometry

J. I. GORDON, B.A.
Toronto

THE importance of review-work in geometry can scarcely be overestimated. The review is to the student of geometry what the grindstone and well-arranged work bench are to the mechanic. The latter must know what tools he has, must have them sharp, and must know where he can lay his hands on them without a moment's hesitation, or he will make poor progress with his work. So with the student; he will have little success in solving new propositions or deductions unless he is perfectly familiar with the means he has of solving these, namely, the previous propositions and deductions; and the only way to keep these familiar is by frequent reviews. Without these, geometry will become a hated task and not a pleasing intellectual effort resulting in a feeling of achievement when a problem is solved. The pupil will lose interest and his work in geometry may become a mere memorization of some of the proofs given in the text because he has not the equipment with which to solve the problems independently and to make geometry a real mental exercise.

In geometry, as in most other subjects, some sort of review should be conducted on the completion of a definite topic. For example, when the propositions dealing with parallel straight lines have been covered they should be reviewed so that the pupil will see exactly, and at a glance, just what new tools he has acquired through the study of this topic. Such a topical review is all the more necessary if the propositions dealing with a single topic are separated in the textbook by other propositions on a different topic. The review should be held, also, on the completion of several topics more or less closely associated, perhaps treated of in the same propositions in the text; *e.g.*, the means of proving *lines* equal, and *angles* equal.

But the place where the review is absolutely indispensable is in beginning a new topic. The new must always be associated with the related familiar: and the facts of value in solving the new problem must be made familiar by review if they are not so already. This sort of

review, however, must not be carried too far. If the teacher is reasonably sure that the pupil is familiar with his tools and can tell just which ones are required, it would be unwise to spend much time in review. But ordinarily some sort of review will be necessary in introducing each proposition and each topic. This means that there will be a brief review in almost every lesson to connect the new work with the old. If this method be followed the class will solve most of the propositions almost unaided and the textbook will seldom be used.

Before examination, of course, much review work must be done. Its scope will depend on the kind of examination and the amount of work covered since the last examination of a similar kind. Much of this review work must be done independently by the pupil; but he should be guided and helped by the teacher. An oral review in class at such times will not only show where the pupil's difficulties are and what review work he is himself accomplishing, but will also serve partly as a test of his familiarity with the work.

There is one other place for review, one that is likely to be passed over by the inexperienced teacher, *i.e.*, at the beginning of a term. The teacher would like to begin with the work prescribed for his class for the year, and to assume that the pupil's knowledge of the previous work in geometry is as complete as the class record for the previous term might seem to indicate. Alas! this record is no guide to the pupil's present knowledge of the subject. What he learned the previous year has become dimmed by the other interests which have superseded geometry for weeks or months, and this must be revived by a careful review, varying in length according to the length of the vacation. When the teacher begins a new term, or when he enters a school for the first time in the middle of a term, it is never safe to assume that the pupils know any geometry. Review and test the previous work. It is not a loss of time; it saves time.

Exercises as well as propositions may be included in the review. The more important ones will be found useful in solving new exercises and propositions. As exercises form a considerable part of the examination paper in geometry it is important that they be kept fresh in the mind of the pupil. A review of exercises is also a review of the propositions on which they depend. That this review may not take up too much time, the exercises selected should be short and fairly easy, and the teacher should know in advance just what exercises he will use.

For the method of review no hard and fast rules can be laid down. But, to be effective, the review must be brief, interesting, and must leave an impression. If it is to be employed in almost every lesson, but a very small part of the period can be devoted to it. To make it brief, it should usually be conducted orally. To keep the interest of the class, many questions should be asked and these should be well distributed. To

make an impression, the questions should be logical and the blackboard should be used. In reviewing the topic of equal angles, the teacher might ask different pupils each to tell one method of proving angles equal, or he might ask one pupil to mention as many methods as he can. Then the teacher might write on the blackboard, in the briefest form, the means mentioned by the pupil. If other topics are to be reviewed in the same lesson they might be treated similarly. In general, this will be the method of review. It may be varied by having pupils write on the blackboard or on paper a list of propositions dealing with a topic; or by teacher or pupils drawing roughly the figure used in each proposition. When introducing a new proposition, the teacher should review all the propositions which might be of use in solving it and allow the pupils to make a selection. To review but one proposition, the application of which is perfectly obvious, is to deprive the pupil of much of the pleasure of solving the problem and to lessen his interest in the subject.

Punishment—The Family Standpoint

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Riverdale Collegiate Institute, Toronto

PUNISHMENT as it operates in the family and in the school is fundamental and far-reaching in its scope and results. For as is the family, so is the school; as is the school, so, in great measure, is the citizen; and as is the citizen, so is the state. In this connection we are regarding punishment in its widest meaning; *i.e.*, including all sorts of deterrent influences and factors, and all the varied restraints imposed on the individual from his birth on to maturity.

In our last article we took the position that all rational punishment should be, and in its working actually is, at once deterrent, retributive and reformative. In short, punishment should aim at being educative. Educationists, political economists, prison reformers, juvenile court officials—all have the one objective; viz , the formation of character, the making of good citizens. And what in the nature of things can possibly be regarded as more potent factors in this process than the family and the school?

The Family.

It is sometimes the case that the man of high scholastic attainments in the realm of moral philosophy is himself weak in morals; that the man who knows most of the science of a branch of learning is a mere tyro in the art of it. So in family life. Those parents who should, from their

educational advantages, prove the most efficient trainers of their children are often lamentably lacking in the qualities that make for moral leadership. There is a popular fallacy that the sons of clergymen are instances of such cases. It is a fallacy, however, which has its origin in the habit people have of watching such cases and noticing them in clergymen's families when they would let them pass unnoticed in the family of a layman. To reverse Spencer, they mark the "*misses*" and ignore the "*hits*".

Notwithstanding the above facts, it may be stated without much qualification that most of the evils arising from the wrong, or at least the defective, up-bringing of children, are due to the ignorance of truths that are known to very few. One of these truths is this: Conditions affecting the changing life of society are bound to affect the family life. Too strict adherence to "what my father did when I was a boy" often works havoc in one's own efforts to train one's children in the way they should go. The world moves, and that means that we move with it in all its varied and ever-changing phases of development. *The exclusively retributive, the exclusively deterrent, the exclusively reformative ideal of restraint or punishment is one-sided.* And yet how many parents adopt the old Irish dictum: "I 'bate' you, not because I hate you, but to show my authority over you".

Too much restraint, then, upon one's children's natural inclinations for boyish enjoyment, whether physical or intellectual, is to be deprecated and avoided.

The boy is a man, the girl is a woman, "writ small". We, as grown-ups, crave for physical fun—skating, tobogganing, various sports—and without any qualms gratify our wishes. When our boys and girls ask for the same privilege, we say: "Wait till you are older; there is time enough yet". Little do we think that it is nature that is calling. The instinct for play is demanding of that boy, who in turn demands of us, the opportunity for development. We who say "No", often err and err greviously, because of ignorance of a little psychology—a big term for commonsense, the scarcest commodity in the family market.

Puritanism is good only in so far as restraint develops along right lines; it is bad when it wilts, blights, or withers the legitimate impulses or desires of young boyhood and girlhood. Prudery and false modesty are a sure harvest from such sowing in the land of morals.

One is strongly reminded here of that well-conceived play of "Bunty Pulls the Strings", which so well portrays the rigorous repression exercised by Scotch fathers not so many years ago. The stories of Jeanie Dean in Scott's *Heart of Midlothian* and of Flora Macdonald in McLaren's *Bonnie Briar Bush* amply illustrate such a family ideal in training—austere, cold, aloof; where the father was a breathing ice-berg whose benighted intelligence failed to grasp the true situation: viz., that the *daughter's fault* was the fruit in part of *his training*.

In the present day we have fewer Tamas Biggars and Lachlan Campbells of the Scotch type; but on the other hand we tend perhaps to the other extreme, where the children practically run the family—where they determine the form of punishment and restraint. This, too, is bad; worse than the other. For too much freedom given to a child speedily develops into license, and that surely destroys the moral fibre.

Teaching Children Self-denial.

Boys and girls must learn the lesson of self-denial; must learn to see that there are some things that even they must be denied. As they are not judges of such, the parents must judge and decide for them. Family life should consist of *not restraint without freedom*, nor of freedom without restraint, but of freedom *within* restraint; freedom to choose and act within well-defined limits without encroaching upon the rights of others.

To achieve this end parents would do well to use corporal punishment when needed; for a little strapping now and then has been relished by the wisest men. Precept and example are needed, as the child learns to know by doing and to do by knowing.

Other essentials are candour, sympathy, gentleness. Let your boy know that you are with him in his joys, his sorrows, his aims. Guide and direct him in the main; but if driving is necessary to the accomplishment of an end, do not hesitate to drive when he is young. You can put a collar on a two-year-old colt much more easily and with much less loss of dignity than on a six-year-old horse never harnessed before.

When one's sense of duty coincides with one's natural inclination, oh how easy it is to do one's duty! Moral action may be briefly defined as action along the lines of greatest resistance. Hence a boy (or girl) who is obedient to his parents, with or without the assistance of the various forms of punishment, learns to renounce his wilfulness and his natural selfishness, he learns to master his passions and to conduct himself with deferential gentleness.

How to Punish.

As to forms of punishment opinions differ. All are agreed that there should be kinds, and degrees within kinds. It is the when, the where and the how on which we differ. However, children, when young, should never be controlled by frightening. Fear of a goblin, of any kind of "boo-boo man", is bad for a young nervous system. A child's fear should be confined to "that of the rod", which should be used sparingly, but it should, nevertheless, be used if deemed wise. Putting a child to bed without his supper is an unnatural punishment. Herbert Spencer advocated "discipline of natural consequences". For instance, if a boy spills ink on the floor, he should be made to clean the floor; if he comes late for his dinner, give him a cold dinner, or have him heat it himself.

Accordingly, on this reasoning, a boy should be put to bed supperless only when he has eaten too much, and no boy would object to that! Spencer's theory, of course, could not be applied to all cases, for sometimes one would have to wait a life-time for the natural punishment to take place. That would be like the case of the Scotchman robbing an Englishman's store of a piece of tartan. The Englishman, helpless, said, "You will pay for this at the judgment day". To this the Scotchman replied, "Ah, weel, since it be sae lang a credit, a'll tak' as much mair".

Proper training consists, after all, in the inculcation of a logically connected chain of truths that plows its little groove in the plastic young brain, which abides, perhaps forever. For "as the twig is bent, so is the tree inclined". Whether or not punishment in the usual acceptance of that term is needed and to what extent, depends on the nature of the child, the family environment, and the character of the parent. We all know how the stoppage of a gall-duct, the pain of a toothache, the bruising of a thumb by an ill-directed hammer, turns our world topsy-turvy, and woe to the one who at that time incurs our displeasure. As a result, many a child is punished to-day for an offence for which he might go scot-free to-morrow.

The March Competition in Art

THE number of drawings from Public and Separate Schools was the largest yet received in this division of the competition. Among them were some very interesting studies, certain schools being represented by several which reached a high standard of excellence and displayed rather fine qualities of colour and atmosphere as well as good drawings and composition. Teachers and pupils responsible for these drawings are to be congratulated.

The Lower School work was for the most part of a very high character. It is to be noted that the accompanying reproductions in black-and-white cannot be expected to indicate the candidates' skill in the handling of water colours.

The work of the Middle School candidates was disappointing. First, much of it was not Gothic; secondly, the perspective of the drawings was very bad. A brief course in angular perspective, particularly in the drawing of a cube, a square pyramid, a cylinder, and a cone at various heights and angles would be of great benefit to those candidates whose drawings of church towers, porches, transepts, etc., showed a lack of knowledge of the location of vanishing points and of the principles of foreshortening.

A. Forms I and II.

First Prize—Ruby Tedford, Dufferin Public School, Owen Sound. Teacher, Miss Dobie.

Second Prize—Ernest Delorme, St. Patrick's School, Hamilton. Teacher, Sister L. Bertrand.

Third Prize—Nora Warner, Victoria School, Moose Jaw, Sask. Teacher, Miss M. Andrews.

Honourable Mention for Merit—Alma Moorcroft, Annie Wood, Allan Moore, Roy Moorcroft, Public School, Rimington. Pauline Graham, Bruce Robertson, Gordon Nonris, Ione O'Connor, Jim Pape, Joe Morin, Peggy Morin, Alan Baigent, Loretto Academy, Toronto. Katherine Kernahan, Irene Brady, P. Navin, Marion Douglas, Janet Janes, Gertrude Regan, Margaret Kormann, Margaret McAuliffe, Yvonne

(*Upper row, left to right*)—1. Fred Hall. 2. Edna Fletcher. 3. Neil Campbell.
(*Lower row, left to right*)—1. Eileen O'Brien. 2. U. Ramsay. 3. Olive English. 4. Ruby Tedford.

Poissneau, Rose Hayes, Cecile Soucy, Catherine Griffin, Mary Kernahan, St. Joseph's College, Toronto. Eveline Dielle, Ernest Belanger, St. Ignatuis School, Sault Ste. Marie. Amy Whitehead, Thelma Taggard, Elsie Strickland, Prince Arthur School, Moose Jaw. Millicent Rose, King Edward School, Moose Jaw; Florence Locke, Bessie Carr, Gerald Pragnell, Victoria School, Moose Jaw. Albert Sauve, Mary Ladouceur, S. Ladouceur, Laurette Boucher, Isabelle Martel, Separate School, Vankleek Hill. Isabel Chester, Alma Woodford, Mabel Ward, Edna Schultz, Agnes Alexander, Ida Fraser, Margaret Browne, Mamie McMaster, Bessie Edwards, Sadie Woolrich, Norma Smith, Clara Fraser, Strathcona School, Owen Sound. Lillian Harrison, Florence Peel, Helen Horning, Charlie Gentles, Archie Gardner, Charlotte Fenton, Helen Merritt, Ina Heighes, Lucille Green, Ruth Leonard, Jennie Parks, Elaine Roe, Dora Kenny, Karl Dougherty, Norman Horton, Ryerson Public School, Owen Sound. Jean Green, Annie

Wood, Mary Wood, Willie Shakespeare, Harvey Pettit, Doris Mannett, Helen Pettit, Winnifred Smith, Lucy Dynes, J. H. Shakespeare, S.S. No. 4, Nelson, Freeman. Willie Oiseau, James Laulor, E. Eves, St. John's School, Kingston. Anna Schefter, Isabel Goetz, Harry Schumacher, Andrew Ernerween, Separate School, Mildmay. Fred Hall, Lucy Cheyne, Ralph Lynn, Dorothy Sparrow, Herbert McCann, Gerald Van Kolken, Bertha Matthews, Ethel Ward, Reta Burgess, Grace Poole, Rosie Ryan, Alexandra School, Moose Jaw. Josephine Aussem, Dorothy Long, Madeleine Sweeny, Agnes Cunningham, Helen White, Edmund Clark, Monica, Boyes, Willie Casey, Georgina Guay, Eugene Aussem, Winston Hamilton, Eileen Vollick, Lois Duffy, Hurby Ford, Jean Roach, Chester Cullen, Margaret Long, Marie Osier, Justin Dore, Mary Warnick, James McDonald, Willie Fitzpatrick, St. Patrick's School, Hamilton. Jean Mathieson, Aleda Patchell, Public Schooll, Chesley. Nelson Pickell, Evelyn Yolng, Robert Miller, Ilene McGlenning, Annie James, H. Owesn, W. G. Niblett, Tom Potter, Edgar Hawke, Evelyn Catchpole, Jessie Carr, Margaret MacKay, Grace Tiner, Percy Underwood, Morrison Reid, Gordon Grey, Clayton Taylor, Dufferin Public School, Owen Sound.

B. Forms III and IV.

First Prize—Neil Campbell, Ryerson Public School, Owen Sound. Teacher, W. Douglass.

Second Prize—Eileen O'Brien, St. Joseph's College, Toronto. Teacher, Sister Leonarda.

Third Prize—Olive English and U. Ramsay, Ryerson Public School, Owen Sound. Teachers, W. Douglass and Miss Agnes Burt.

Honourable Mention for Merit—Clarence McCoy, Stanley Moorcroft, Myrtle Phillips, Estella Moorcroft, James Wood, Laura Smith, Agnes Gordon, Public School, Rimington. Gordon Moore, S.S. No. 2, West Flamboro, Millgrove. Gladys Graham, Helen Manley, H. Woods, Adelaide Baigent, Norma Grupe, Dick Baigent, Ethel Monjian, Loretto Academy, Toronto. Ada Hepburn, S.S. No. 7, Yarmouth, St. Thomas. Helen Densmore, Public School, Penetanguishene. Alice Hayes, Mary Hayes, Blanche Crowley, Marion Chadwick, St. Joseph's College, Toronto. Marion Donaldson, Elfreda McMillan, Victoria School, Moose Jaw. Ward Ellis, Evelyn Gusa, King George School, Moose Jaw. Victor Holker, Dick Leak, King Edward School, Moose Jaw. Thomas McKay, Prince Arthur School, Moose Jaw. Warren Williams, Bertha Williams, Empire School, Moose Jaw. Vera Schultz, Mildred Vincent, Nellie Alexander, Stanley King, Harvey Lindsay, Lane Chester, Dorcas Watts, George Flute, Perry Smith, Strathcona School, Owen Sound. Charlie Paterson, Harold Paterson, Central School, Hamilton. Reine Lalonde, Avila Beriault, Raout Deslauriers, Ida Dotte, Elizabeth Laviolette, Evelyn Brunet, Laura Groulx, Leopold Sabourin, Hermoine Hind, Sacred Heart Academy, Vankleek Hill. Velma Smith, Hazel Dynes, Doris Alton, Beatrice Pettit, S.S. No. 4, Nelson, Freeman. J. Cunningham, Teddy Heming, Hazel Cheer, May Herbert, Katherine Kindree, Douglas English, H. L. Banks, Marie Christie, V. Willoughby, L. Bender, Ottolee Rolston, Arthur Pugsley, Arthur Cooke, Donald Patterson, Madelean Cooke, Charlie Banks, Thelma Lewis, Ryerson School, Owen Sound. Alice Blyth, Charlie Copeland, Herbert Taylor, Fred Hamlin, Perth Avenue School, Toronto. Norman Schumacher, Separate School, Mildmay. Edgar Lagroix, Alta Lagroix, Margaret McMartin, Bessie Burwash, Hazel McGregor, Muriel Warner, Harold McGill, Public School, Martintown. Florence Carleton, Henrietta MacDougall, Public School, Underwood. Mina McCuaig, Etta Flanagan, Jack Tizzard, Emily Dickie, Carman Bognall, Madeline McMeekin, Barrett Wilcox, G. McCuaig, Gladys Craig, Dufferin School, Owen Sound. Victoria Hoida, Mary Feduzzi, Louis Gerhard,

Geraldine Kew, William Horrishen, Annie Bociek, John Kondrat, Stella Malec, Henry Mecke, Jack Mathews, Caroline Bociek, Salvatore Padrone, Florence Tinan, Gladys Behnke, St. Ann's School, Hamilton.

C. Lower School.

First Prize—Fred Hall and Sam Kamin, Jarvis Collegiate Institute, Toronto. Teacher, A. E. Allin, M.A.

Second Prize—Edna Fletcher, High School, Bowmanville. Teacher, Miss Isabel Smith, B.A.

Third Prize—Lyda Ridley, Continuation School, Thamesville. Teacher, Miss C. Nichol.

Honourable Mention for Merit—George Allen, High School, Wingham. G. E. Gastle, F. F. Waddell, L. Farson, M. Puttick, Frederica Thomson, Collegiate Institute, Hamilton. I. Connolly, N. McGuane, Lillian Desroches, Nora McGuane, Alicia Kumann, B. Coffey, Anna Corrigan, Marguerite Haynes, Margery English, Helen Mathews, Clare Moore, St. Joseph's College, Toronto. Marie Keating, Gertrude Flanagan, Louise Mulhall, Hilda Chapman, Hanna Dwyer, Anna Woods, Loretto Convent, Stratford. Margaret Cryderman, Evelyn Harmer, Edith Harmer, Harold Corlett, Kathleen Dow, Helen Stuart, Continuation School, Thamesville. Vilda Symons, Kate McGregor, High School, Bowmanville. Alberta Hunter, Amy Beal, Madeline Stinson, Lulu Elcome, Jack Hardill, Velma Sanderson, Stanley Curtis, Collegiate Institute, Peterboro. R. Dixie, Pauline Brown, Oliver Austin, Jarvis Collegiate Institute, Toronto. Ethelwyn Hutcheson, High School, Port Perry. Helen Best, Annie McDougal, Ruth Brett, Vera Buttery, Irene Shields, Robert Simon, Blanche Hunter, Lela Currie, Collegiate Institute, Strathroy. Georgina Sproule, Louise McVanel, High School, Shelburne.

D. Middle School.

First Prize—Helen Bulmer, Collegiate Institute, Peterboro. Teacher, Miss Lenore Sanderson, B.A.

Second Prize—W. Milne, High School, Durham. Teacher, Miss Julia Weir, B.A.

Third Prize—Mary O'Leary, Loretto Convent, Stratford. Teacher, Sister Theodosia.

Honourable Mention for Merit—Nellie De Courcy, Mary Grant, Bertha Carbert, Mary Walsh, Elizabeth Whaling, Eugenia Ducharme, Katherine Kemp, Anna Halpin, Loretto Convent, Stratford. Ethel Rowe, Florence Staunton, Audrey Miller, Janet Sanderson, Ada Shelton, Collegiate Institute, Peterboro. Janette Taylor, Hazel Sullivan, Collegiate Institute, Strathroy. Mabel Stein, Collegiate Institute, Brockville. Margaret McCuaig, Blanche Carruthers, May Grant, Wanda Bowman, Collegiate Institute, Barrie.

The prizes for the High School competitions were received from the Prang Company on March 15th, and were immediately forwarded to all who had earned them. All prizes will now go out promptly, addressed to the teachers concerned.

"There must be some mistake in my examination marking. I don't think I deserve an absolute zero," complained the student.

"Neither do I," agreed the instructor, "but it's the lowest mark I'm allowed to give."

The Truth about the Gulf Stream

PROFESSOR G. A. CORNISH, B.A.
Faculty of Education, University of Toronto

THE famous first chapter on the Gulf Stream in Maury's *Physical Geography of the Sea*, written more than half a century ago, has done much good and a little harm. It has done much good since by its vigorous, interesting style it aroused an interest in physical geography and showed how entrancingly interesting the phenomena of nature become when they are presented in a striking manner. But in Maury's day comparatively little was known about the Gulf Stream and still less about other oceanic currents. The remarkable effects of this notable stream on the climate of Western Europe, as stated by Maury in such a convincing way, became so crystallized in the minds of all students of geography, that the more complete knowledge, which we now possess, though it proves convincingly that many of the alleged climatic effects of the Gulf Stream are due to an entirely different source, experiences great difficulty in finding a way into school text-books, much less into the minds of the pupils.

The Gulf Stream issues as a very definite stream of water from the Strait of Florida. As it follows the coast of the United States it becomes wider, loses much of its speed, and becomes cooler. It can be traced as far as the south-east of Newfoundland, where its waters become mixed with those of the Labrador Current and all trace of it disappears. In fact, during January and February, the cold Labrador Current cuts right across its path from north to south. This must destroy it most effectively. It is to be noticed that this is the very season when it is supposed to be doing its most salutary work in mitigating the climate of Britain and Scandinavia.

In the north temperate zone the prevailing wind is from the west. This wind blowing across the oceans produces drift currents across both the Atlantic and the Pacific from east to west. The North Atlantic Drift Current, which moves from south-east to north-west across the Atlantic, was undoubtedly considered a continuation of the Gulf Stream, but the fact that during January and February the Labrador Current flows from north to south between the two would indicate that they are quite distinct.

Neither the Gulf Stream nor the North Atlantic Drift have much effect on the climate of Western Europe. It is well known that the temperature of the oceans is warmer than that of the land in the same latitude during the winter and colder during the summer. Since the

prevailing winds over Western Europe are from the south-west, they blow from over the oceans and will give to Western Europe the climate of the Atlantic Ocean from which they come. Now in winter the water of the oceans in temperate regions never drops down to the freezing point of salt water (say 28°F.), hence the wind blowing off the ocean will never have a low temperature, and the climate of the whole of Western Europe will be warmer than if the prevailing winds were from some other direction. If Central America became depressed below the sea and consequently there were no Gulf Stream, the climate of Western Europe would be much as it is to-day, provided the westerly winds still prevailed.

It is just as absurd to state that Labrador is cold in winter on account of its proximity to the cold Labrador Current. The fact is that at this season the air over Labrador is very much colder than the waters of the Labrador Current. The prevailing wind over Labrador is from the west, and consequently it could not receive its climate from the ocean to the east of it. Labrador is cold because the prevailing winds come from the cold interior of Canada, and these winds give Labrador the extreme climate of Central Canada. The effect of these winds is felt far to the east of Labrador over the Atlantic Ocean. Hence it is more nearly correct to say that Labrador makes the adjoining region of the Atlantic Ocean cold, than to say that the Labrador Current produces the low temperatures of the adjoining land.

What is true of the North Atlantic is true of the North Pacific and of all other parts of the ocean. British Columbia has mild winters, not because it is bathed by the Japan current—which, in fact, does not come within thousands of miles of it—but because the prevailing winds are from the ocean.

Jim and Bob were just getting over chickenpox and were not allowed to mix with other children, but were well enough to play in their own yard. They were apparently tired of the yard and ran off to the hills with their sleigh. On their return I said to them: "I hope you have not been near any other children?" Bob, who is five years of age, answered: "Oh, mother, I just told all the kids we had chickenpox, and they beat it; so we had the hills all to ourselves."

To her class, a teacher put this question: "How many kinds of poetry are there?' "Three," replied one pupil quickly. "What are they?" "Lyric, dramatic, and epidemic."

The teacher had recited "The Landing of the Pilgrims." Then she requested each pupil to draw from imagination a picture of Plymouth Rock. Most of them went to work at once, but one little fellow hesitated, and at last raised his hand.

"Well, Willie, what is it?" asked the teacher.

"Please, ma'am, do you want us to draw a hen or a rooster?"

Notes and News

Captain Alex Firth who resigned his position in Orangeville to go overseas at the beginning of the war has returned to Canada and is now Principal of Waubaushene Public School.

F. H. Anderson of Gainsborough, Sask., has been appointed Principal of Strassburg High School.

P. O. Nelson, formerly of Bolton, Ont., has been appointed Principal of the Public School at Mount Forest.

At the annual meeting of the Schoolmen's Club of Toronto the following officers were elected for the ensuing year: President, Inspector J. A. Houston, M.A.; Vice-President, P. F. Munro, M.A., B.Paed.; Second Vice-President, D. D. MacDonald, B.A.; Secretary-Treasurer, T. J. Wallace, 456 Wellesley St.; Directors, Dr. A. C. MacKay, Professor D. R. Keys, Professor J. T. Crawford, G. A. Smith, B.A., J. T. Mustard, W. G. Ward; Auditors, R. A. Gray, B.A. and T. A. McWhorter.

Major J. N. Parker, B.A., has been appointed by the Salvation Army to take supervision of its schools in Newfoundland.

A. V. Turner of Frank, Alberta, has enlisted for overseas service.

Miss Ruth B. Heather is teaching history and commercial work in Streetsville High School.

Miss Lilian Bunt of last year's class in North Bay Normal School is teaching in Chapleau; Miss Lulu McClean has the primary classes in the same school; Miss Barbara Thomson is teaching in Copper Cliff.

Miss Gladys R. Kirk is teaching art and junior science in Chatham Collegiate Institute.

J. B. C. Runnings is on the staff of Sarnia Collegiate Institute.

On application to F. C. C. Lynch, Superintendent of Natural Resources Intelligence Branch, Department of the Interior, Ottawa, teachers can obtain an official publication known as the Bank Map of Ontario and Quebec.

S. Geiger, formerly of New Liskeard, is now teaching in Hensall.

Additional news of the class of 1916-17 in the Faculty of Education, University of Toronto, is as follows: Miss Nellie M. Houghton is in Anglia, Sask.; Miss Marjorie E. Inman is at R.R. No. 1, Marshville; J. Howard Scott has enlisted with the C.O.T.C.; Miss Maude E. Bruin is at R.R. No. 6, North Gwillimbury; Joseph Lapensee, B.A., is Principal of the Continuation School at Alfred; Miss E. J. Newham is Principal of Kars Continuation School.

Miss Angela Ryan of last year's class in Stratford Normal School is teaching at St. Williams and Miss Ellen Eagleson of the same class is Principal of Rockland Public School.

Miss Mary Lynch of last year's class in Peterborough Normal School is teaching at R.R. No. 3, Indian River.

Recent graduates of Calgary Normal School have secured positions as follows: Miss M. H. Villy is at Sunny Slope; Miss Elizabeth Smart at Didsbury; Miss May Ballantyne at Purple Springs; C. H. Flegg at Foremost; Miss L. Price at Beaver Mines; Miss Ruth A. Williams at Duchess; Miss Marie Ontkes at Carstairs; Miss Nellie Squires at New Dayton; Miss Kathleen M. Mason at Kipp; Miss E. I. Bennett at Lathom; Miss Margaret Topliss at Chin.

G. J. Skafel is teaching at Holar, Sask.

Some recent graduates of Camrose Normal School are now teaching as follows: Miss Grace Hamrew at Galahad; Miss Bertha M. Samis at Bittern Lake; Miss Mary E. Ryan at Brush Hill; Miss C. E. Kapler at Strome.

Alberta

On Friday evening, February 8th, the grillroom of the Palliser Hotel, Calgary, was the scene of a jolly informal gathering in honour of J. A. Smith, B.A., who has just been transferred from the post of Inspector of Schools for the Calgary district to that of Registrar of the Department of Education, Edmonton. About fifty of Mr. Smith's friends, including teachers, fellow-curlers, and others, joined in a banquet, after which a fairly extensive toast list was offered. Mr. J. E. Loucks, B.A., of the Normal School staff presided.

There has been a general shuffle among the Inspectors recently. Mr. Torrie goes to Macleod and is succeeded in the High River district by Mr. Hicks. Mr. Watson succeeds Mr. Hicks at Onnoway. Mr. Russell goes from Red Deer to Camrose and is succeeded in Red Deer by Mr. Williams. Mr. Lord succeeds Mr. Williams at Tofield. Mr. Gorman moves to Calgary and Mr. Hodgson, formerly of Macleod, takes charge of the Medicine Hat district.

Mr. Robeson, B.A., has been appointed Principal of the Redcliffe schools to succeed Mr. R. H. Liggett who recently assumed charge of the Bassano Inspectorate.

Mr. D. L. Shornliffe of Hartney, Manitoba, has been appointed to the staff of the Victoria High Schools, Edmonton, to take the position vacated by Mr. George W. Robertson, recently appointed to the vice-principalship of Victoria High School, McDougall Annex, taking the place of Mr. A. J. Watson, who resigned to assume his inspectoral duties in February.

Miss Evelyn Edwards, Calgary, and Miss Chute, formerly of Claresholm school staff, have been added to the staff of the Elm Street School, Medicine Hat.

Miss Nora E. French, a very successful teacher in the Medicine Hat schools, has resigned to take charge of the Flowering Valley School near Winnifred, Alberta.

Inspector G. W. Gorman was the guest of honour at a banquet at the Assiniboia Hotel, Medicine Hat, shortly before his departure from that city in February to take charge of the Calgray district. The banquet was given by the male teachers of the city staff and a few other personal friends. Mr. W. E. Hay, B.A., city superintenent, presided. The speakers of the evening paid many pleasing tributes to Mr. Gorman, the keynote of which was his spirit of geniality and good comradeship. He was spoken of as a "good mixer", and it was asserted that he has probably more friends than any other man in town. The very best wishes of the teaching fraternity not only of Medicine Hat but of the entire Province follow Mr. Gorman to his new field of labour in the Calgary Inspectorate.

A very successful entertainment was recently held in the H. A. Gray School, Edmonton, under the direction of Principal G. D. Misener and his staff. A unique result of the evening was the organization of a Parent-Teachers' association, having in view the establishment of a more intimate relationship between the homes in the community and the school. The parents responded very heartily to the invitation to co-operate and the school is much encouraged by the splendid spirit of appreciation shown by the parents of the pupils.

Miss Pearl Henderson, for the past year teacher at Walsh, has been appointed to the staff of the Medicine Hat Public Schools.

The produce of the twenty-six lots cultivated by the Edmonton Public School children consisted of a crop of 480 bushels of potatoes for which they have received the sum of $350.00. The proceeds are being used to buy athletic equipment for the different schools participating. The interest in this work has been quite keen and it is expected that even more land will be cultivated this year to the profit both of the community in food and of the school in experience and money.

Manitoba

In a recent address Ira Stratton, Official School Organizer, declared that those teachers who volunteer for work among the non-English-speaking districts are "the true home missionaries". "And yet", said Mr. Stratton, "people say that a girl is throwing her life away to go to teach these people. They send missionaries to China, missionaries to India, and yet it is throwing a life away to go out into the outlying settlements in Manitoba and teach the children of our non-English-speaking people to be good citizens!" Mr. Stratton further declared that

these children will be the specialists of to-morrow, that they possess an ability to concentrate which many English-speaking children seem to lack.

The University of Manitoba has introduced a programme of extension work for this year in co-operation with the Provincial Agricultural College, the Normal School, and the Inspectors of the Province. This is not the first effort made by the University, but has a special significance because it is the first made by the new University Board. The present programme expresses the desire of the new administration to bring the work of the university out into a broader and larger field of activity. Among the new features of this extension work will be courses offered by correspondence. The work is only in its earlier stages. It is in the hands of a committee of the University Board with Professor A. A. Stoughton as organizing secretary.

Following the establishment of evening courses which were planned to benefit city people who are ambitious to improve their education in commercial subjects the University of Manitoba, on the recommendation of the Advisory Committee on Commercial Education, offered a week's Course in Merchandising to be held in the Arts Building of the University, February 4th to 9th. This is the first Short Course in Business which has been offered in the West. The business men of Western Canada maintain that lawyers, doctors, teachers, and preachers must not monopolize University training. It is a significant step towards the utilization of all the educational forces at hand. The speakers at these Short Course lectures include Frank Stockdale, of Indianapolis; G. Pryor Irwin, of the University of Wisconsin; Dr. W. A. McIntyre of the Normal School, Winnipeg; Dr. James A. MacLean, President of the University; His Honor Sir James A. M. Aikins, Lieut.-Governor; F. Pratt Kuhn, manager of the Winnipeg office of A. McKim, Ltd.; Chas. S. Wiggins, manager of Wiggins' System; John Parker, President of the Institute of Chartered Accountants; Robert C. Skinner, of Merchants Consolidated Ltd., expert on window dressing; F. T. Baxter, manager of Baxter Sign Co.; Fletcher Sparling, General Manager of Hudson's Bay Co., Winnipeg; W. A. McKay, manager of Codville Co.; G. N. Jackson, manager of Walter Woods Co.; and W. H. Trueman, K.C., lecturer on commercial law.

The thirteenth Annual Convention of the Manitoba Educational Association will be held in Kelvin High School, Winnipeg, April 1st to 4th. A fine programme of addresses, demonstrations and educational exhibits is in preparation. There will be classes of instruction in art, paper-folding, paper cutting, basketry, and fruit and vegetable canning. Last year 1,500 teachers registered; it is expected that 1,800 will attend this year.

The Brandon Normal School is making a distribution of trees, shrubs, and herbacious perennials this spring, free to the schools of the Province. All applications are to be made to Principal B. J. Hales, M.A., Brandon.

The teachers of the Public Schools of Portage la Prairie on February 6th organized themselves into an association to be known as "The Portage la Prairie Public School Teachers' Association". The officers are : Hon. Pres., Inspector Maguire; Pres., Miss Bannerman; Vice-Pres., Miss Ormond; Treas., Miss Home; Rec. Sec., Miss Craig; Press and Corresponding Sec., Miss Bickle; The members of the Executive Committee are the elected officers and Mrs. Oliver, Miss McCarthy, Miss Gill, and Miss Angus. The society has affiliated with the local Council of Women, the delegates being the President, Miss Sanders, Miss Roxburgh and Miss Francis.

Just now there is a revival of the agitation for the removal of the "Latin barrier". There appears to be a wide-spread desire that the matriculant should be admitted with one foreign language and that optional. Some time ago, R. Fletcher, B.A., Deputy Minister of Education, Dr. Daniel McIntyre, Superintendent of Winnipeg schools, Dr. W. A. McIntyre of the Normal School, Professor W. F. Osborne of the University, and President J. B. Reynolds of the Agricultural College constituted a committee of the University Council which favoured the removal of the "Latin barrier". The report of the sub-committee was not adopted at that time, but there seems little doubt that the new needs and conditions will have to be met and the pressure of public opinion will force open the doors of the University in order that it may meet more effectively the need of the different classes of students and conform more fully to the conditions of the community which it is intended to serve.

An amendment to the Public Schools Act has just been passed, giving to married women in rural districts the right to vote for, or be elected as, trustees. The amendment does not apply in cities, towns, and villages; these have already a large and increasing number of women who are qualified. At the same time the amendment affects three out of four of all the schools in the Province, so that it is a very important change indeed.

Steps are being taken to organize the ex-students of the Agricultural College into an association. The object is to make the work of former students on farms more interesting and keep them in touch with the work of the college.

New Brunswick

More than eighty teachers attended the short course in nature study at Woodstock in January from the 7th to the 12th. Director Steeves was in charge.

Miss Marjorie Flewelling has been appointed by the Board of Education as teacher to carry on the work of extension of Girls' Home Efficiency Clubs, and to assist in the work of household science in the Normal School when not so employed.

A conference of college presidents, secondary school principals, superintendents of schools and representatives of school boards, was held in Boston on February 14th, 15th and 16th, on the general topic, "War Demands School Time". Dr. Carter, Chief Superintendent of Education for New Brunswick, accepted an invitation from the Commissioner of Education for Massachusetts to attend the conference and to address the Schoolmasters' Club, consisting of 300 representative leaders of education in the State, at a dinner at the Bellevue Hotel, February 16th, on "Education in Canada as affected by the War and Reconstruction".

Fletcher Peacock, B.A., left here last week to join the members of the committee appointed to make a survey with a view to provide for better technical education in the Province. The committee has taken a trip of investigation to the New England States.

Recent Educational Books

[The books listed here have been received from the publishers during the past month. Reviews of most of them will appear in forthcoming issues.]

Poets of the Democracy, by G. Currie Martin. 138 pages. Price 1*s.* 6*d.* net. Headley Bros., London, Eng. This small volume traces the democratic strain in poetry from the time of Piers the Plowman down to Sir Robindranath Tagore, and contains much material that is suggestive.

Commonwealth or Empire, by V. H. Rutherford. 135 pages. Price 1*s.* 3*d.* net. Headley Bros., London, Eng. A very sharp criticism of European imperialism, together with suggestions for such reform in government and reorganization in international affairs as would render another war very improbable. History teachers will be interested in this volume.

A Text-book in the Principles of Science Teaching, by Geo. R. Twiss. 486 pages. The Macmillan Co., Toronto.

Our Ancestors in Europe, by Jennie Hall. 428 pages. Silver, Burdett & Co., Boston, Mass. An introductory history from 800 B.C. to A.D. 1600. The stories are charmingly told and will be enjoyed by children of all Public School grades. A good book for the school library.

Our Ancestors in Europe, Teacher's Manual, by Jennie Hall. 60 pages. Silver, Burdett & Co., Boston, Mass. A manual of instruction and aids in teaching.

Stories the Iroquois tell their children, by Mabel Powers. 216 pages. American Book Co., New York. This is a delightful book of stories for children; it will be found excellent for the school library.

First Lessons in English for Foreigners in Evening Schools,150 pages. *Second Book in English for Foreigners in Evening Schools.* 180 pages. By F. Houghton. *Elementary Economic Geography*, by Chas. R. Dryer. 415 pages. American Book Co., New York.

The Perry's Victory Centenary, 1913, by Geo. D. Emerson. 309 pages. J. B. Lyon Co., Albany, N.Y.

The Continents and their People—Europe, by J. F. Chamberlain. 258 pages. The Macmillan Co., Toronto.

Spanish Conversation, Book I, by E. A. Baton. 93 pages. Price 2*s.* 6*d.* Rivingtons', London, England.

Personal Hygiene, by Walter L. Pyle. 555 pages. Price $1.75 net. W. B. Saunders Co., Philadelphia, The J. F. Hartz Co., Toronto.

Economic Zoology, by L. S. Daugherty. 428 pages. Price $2.00 net. W. B. Saunders Co., Philadelphia, The J. F. Hartz Co., Toronto.

The Dawn of Mind, by Margaret Drummond. 179 pages. Price 3*s.* 6*d.* net. Edward Arnold, London, Eng. This is an introduction to child psychology which every elementary teacher and student of education will find interesting and helpful.

The Treasures of Coal Tar, by Alexander Findlay. 137 pages. Price 4*s.* 6*d.* net. Messrs. Geo. Allen & Unwin, London.

A Short History of Science, by Sedgewick & Tyler. 474 pages. Price $2.50. The Macmillan Co., Toronto.

Suggestions of Modern Science Concerning Education, by Herbert S. Jennings, John B. Watson, Adolf Meyer, Wm. I. Thomas. 211 pages. Price $1.00. The Macmillan Co., Toronto.

The American Girl, by Winifred Buck. 157 pages. Price $1.00. The Macmillan Co., Toronto. This little book is addressed to the modern girl in the hope that it may give her some information she is sure to want and ought to have. It contains advice on many subjects in which girls are interested. The text is divided into three parts, considering three main topics: The Girl's Healthful Body, Her Social Relations, Her Work and Play. Under these there are discussions of such matters as: Some Physiology, Anatomy and Psychology, Dangers and Difficulties, The Care of the General Health, Food and Eating, Exercise, The Girl's Relation to Her Family, Her Friends, Her Employer and Employes, Her Appearance, Her Work in Life, Her Sports and Play, with a final chapter on Women who have Excelled.

Food Problems, by A. N. Farmer, & Janet Rankin Huntington. 90 pages. Price 27 cts. Ginn & Co., Boston, Mass.

The Play Way—An Essay in Educational Method, by H. Caldwell Cook. 367 pages. Price 8*s.* 6*d.* net. Wm. Heinemann, London, Eng.

Practical English for High Schools, by Wm. D. Lewis and J. F. Hosic. 415 pages. Price 94 cts. American Book Co., New York.

Chemistry in the Home, by Henry T. Weed. 385 pages. American Book Co., New York.

Elementary Spanish Grammar, by A. M. Espinosa and C. G. Allen. 367 pages. American Book Co., New York.

Food Preparation, Part I, by Beth Warner Josserand. 148 pages. Price $1.25. *Food Preparation, Part II*, by Beth Warner Josserand. 142 pages. Price $1.25. The Manual Arts Press, Peoria, Ill.

Pattern-Making Note-Book, by Geo. G. Greene. 32 pages. Price 25 cents. The Manual Arts Press, Peoria, Ill.

Laboratory Manual of Chemistry in the Home, by Henry T. Weed. 200 pages. American Book Co., New York.

Hints for the Library

Europe in the Nineteenth Century, by Professor E. Lipson, M.A., of Trinity College, Cambridge, published by A. & C. Black, Ltd., 298 pages, price $1.50. In this book Professor Lipson gives a concise, connected account, analytical rather than narrative, of the internal development of the chief European States after 1815. The author, at first, briefly and clearly connects the modern movements in France, Germany, Austria, Russia, Italy, and the Balkans with the conditions in each country before the French Revolution. Then in a masterful way he unravels the tangled skeins of policies, diplomacy, popular movements, and uprisings so as to reveal the course of development that has resulted in the modern European states. To understand the Great War of to-day one must read this book. The style is scholarly and logical. A running topical index in the margin for each paragraph aids the reader to follow the sequence of thought. Eight portraits and four maps provide illustrative material. A complete index at the end of the volume is also furnished. This book, as well as the author's companion volume, *Economic History of England in the Middle Ages*, is highly recommended to every teacher and student of history. J. F. V.

La Belle Nivernaise, by Daudet, edited with introduction, notes and vocabulary by James Boïelle, ninth edition—Oxford University Press, Toronto. 148 pages, 25 cents. An excellent edition of the text for matriculation, 1918. The notes are clear and well chosen and the vocabulary sufficient for students in this stage of progress. The story is always an excellent one for sight work in the Middle or Upper school. W. C. F.

Modern European History, by Charles Downer Hazen, Professor of History in Columbia University; Published by Henry Holt & Company, New York. Price $1.60. To the teacher of modern history this is a very enjoyable book. Recognizing the importance of a knowledge of the origin of the states of Europe engaged in the present great conflict, the author starts with the idea that the struggle for liberty has been the warp and woof of the later history of Europe. In vivid language, he describes the old régime as it existed in the different countries on the continent, taking France as the background of his story. George III, of England, Frederick the Great of Prussia, Peter the Great of Russia, Napoleon and others are rapidly sketched and the Metternich Age is well portrayed. Passing on he traces the growth of democracy and points out the importance of an accurate knowledge of the industrial revolution between 1830 and 1848. The struggle in Italy for unity, and the development of the German Empire are stated concisely and Bismark receives due recognition. The chapters on England from 1815 to 1914 should be helpful to all readers of English history as they deal with an important period in the social development of the United Kingdom. Following these chapters is an excellent account of what may be termed the growth of the British Empire, and to each colony due reference is made. The partition of the continent of Africa; the awakening of China; the rise of Japanese imperialism; and the Europeanization of the American Continents are carefully handled, while the history of those states in Europe which, at the best, are considered only second rate powers is not forgotten. To the reader, puzzled over the status of the Balkan States, the chapter on the disruption of the Turkish Empire may be heartily recommended. The book closes with a brief account of the peace movement, the causes of the present great conflict and a short chapter on the war itself. The author has a definite plan and this plan he has observed all through the 618 pages of his history. To show the varying phases of the struggle for freedom in the different countries has been his aim. The spirit of nationalism has been in some countries an expression of the desire for liberty, but in others it has been the result of the old desire for national greatness and power. Where economic and social factors have been formative in national policy, he has described them. Altogether he has produced a book that should be read, not only by the teachers of history, but by those who are anxious to obtain an excellent account of the present standing of the world powers.

G. M.

Southern Life in Southern Literature, selected and edited by Maurice Garland Fulton, Professor of English, Davidson College; Ginn & Co., Boston, New York, London. 16 mo., 530 pages, illustrated, 80c. This anthology of the principal writers of the Southern States from the last of the eighteenth to the beginning of the twentieth centuries, and including essays, fiction and poetry, will, of course, be of especial interest to Southern students and readers. But any student of American life and literature will find here valuable and interesting material almost inaccessible in any other form; while older readers who remember the Civil War, the tragedy and romance of the Lost Cause, will renew their youth as they find within its covers "Dixie", "Maryland, My Maryland", "The Bivouac of the Dead", "Somebody's Darling" and other favourites of that day. Excellent biographical and literary notes, good illustrations, including pictures of authors and their homes, reproductions of cuts from early editions, also a well-classified table of contents in chronological order greatly increase the worth of the book. L. L. J.

Shakespeare Criticism: a Selection. With an Introduction. D. Nichol Smith,— Pocket Edition. Humphrey Milford, Oxford University Press. 25-27 Richmond St., Toronto. xxvii+416 pages. Price 30c. In its delightful pocket edition, with clear type, thin paper and tasteful dark-green cloth binding, the Oxford Press presents this selection of Shakespeare criticism. Beginning with tributes from contemporary editors and authors, Heming and Condell, and "Rare Ben Jonson" to the "Starre of Poets", the "Sweet Swan of Avon", including the well-known prefaces of Pope and Dryden, the less-known but wonderful essay of Morgann on Sir John Falstaff, also essays of Lamb, Coleridge, Hazlitt and De Quincy (the Knocking at the Gate in Macbeth) the book closes with Carlyle's matchless chapter, The Hero as Poet, from *Heroes and Hero-worship*. We are grateful to editor and publisher alike for giving us in so neat and inexpensive form so much of the sanest and best of the earlier Shakespeare criticism.

L. L. J.

Greek and Roman Mythology, by Jessie M. Tatlock. Price $1.50. The Century Co., New York. This is an exceptionally well-done piece of work. It is written in a bright and very readable style. It transports one to the infancy of the Greek race, when gods and goddesses were but super-mortals and lived in a gay and youthful spirit and wrought marvels unheard of in our prosaic and skeptical age. The subject is treated systematically and comprehensibly. It is profusely illustrated with pictures of Greek and Roman sculpture. One could not imagine a much more striking contrast to the dry manuals with which students of classical literature are familiar. The mechanical part of the work is excellent. J. C.

Number Games for Primary Grades, by Ada Van Stone Harris and Lillian Walds. Beckley-Cardy Co., Chicago. 1917. pp. 118. Price 60c. In the past the arithmetic period has been a school hour's routine, perfect in its isolation from the actual life and experiences of the child. Any endeavour to make the child's number ideas spring out of the normal and natural satisfaction of his own needs should be hailed by progressive teachers. This little book is such an endeavour. It is designed to create an active interest in numbers through games. Those teachers who are in search of devices that are natural and vital will find much that is suggestive in the fifty-seven games contained in this book. F E. C.

The Essentials of Extempore Speaking, by Joseph A. Mosher, Ph.D., xv+207 pages. Price $1.00. The Macmillan Co. of Canada, Ltd. This book gives in a clear and concise form the essential principles of public speaking. It should be of great practical use to the teacher of oral composition and to the inexperienced public speaker. The various aspects of the subject dealt with in a practical way are: How to overcome the dread of speaking in public; how to gain and hold the attention of the audience; how to introduce, develop, and arrange a speech; how to procure material and use that material in the most effective way from the point of view of style. There are some interesting chapters on the personality of the speaker, his attitude towards his audience, and the proper use of voice and gesture. Altogether it is a very readable and practical treatise on the art of public speaking. A. E. B.

A Note-Book of Mediaeval History, (A.D. 323-A.D. 1453.), by C. Raymond Beazley, Professor of Modern History in the University of Birmingham. 224 pp. Oxford University Press, Toronto, 1917. Price 90 cents. In plan this note-book is somewhat unusual. It arranges the chief features of European history in the Middle Ages, not by countries or topics, but according to order of time. This method serves to give a comprehensive view of conditions and events over a wide area at any particular period, while the complete outline of any topic may be obtained by reference to an index. The Mediaeval Age is divided into twenty-seven comparatively short periods each introduced by a brief list of "general points" characteristic of the period. The "General Views of the State of Europe about 476, 1,000, 1,300, and 1,453" are excellent summaries and a good feature of the work. The book contains numerous well-chosen quotations from Bryce, Gibbon, and others, and some good notes on the chief characters, and outstanding features of the Middle Ages; e.g., the Hanseatic League. Teachers of history may differ as to the plan of the book, but all will find it interesting and suggestive and a help with their work in the senior classes. F. T. J.

Martin Luther, The Story of his Life, by Elsie Singmaster. 138 pages. Houghton Mifflin Co., Boston and New York. This is a timely contribution to the literature of the four hundredth anniversary of the Reformation. In this little volume the author sketches, in clear and simple style, the early life of Luther, his career as a monk, the great crisis of his life, and his final break with Rome. She gives a pleasing picture of his happy home life, and emphasizes the great debt which not only Protestantism, but the whole world, owes to this great reformer. This is an excellent book for supplementary reading, and is well worthy of a place in the school library. J. K.

Laboratory Manual of General Chemistry, by A. B. Lamb. Harvard University Press. 166 pages. This is a combined laboratory manual and notebook such as is used in Harvard College for the first course in chemistry. The author states distinctly that the experiments are specially selected in such a way as to be different from those taken in preparatory schools, in order that students may not have merely to repeat their High School work when they come to the University. The book is particularly interesting to secondary teachers for the very reason that it contains such a selection of experiments. The science teacher will find a feast of new things and he may find some that are suitable for use in his own work. G. A. C.

Old Crow Stories, by Katherine B. Judson. Little, Brown, and Company, Boston. 163 pages. This is a series of bird stories told in an interesting way. Many of the stories are from Indian folk-lore. G. A. C.

Introduction to Inorganic Chemistry, by Alexander Smith, Professor of Chemistry and Administrative Head of the Department of Chemistry in Columbia University, New York. Third Edition; rewritten. Pages xiv+925. Cloth. 1917. The Century Company, New York. The general arrangement of the text is as in the previous editions, with the exception of the chapter dealing with the oxygen acids of chlorine. This has been placed later on owing to its difficulty. The introductory chapters have been again rewritten and improved. Of these too much cannot be said in approbation. They are a regular *tour de force*. More attention has been paid to industrial chemistry, a matter in the interests of our advanced students who cannot afford more than one text. One of the most valuable features of the text is the numerous sections in fine print dealing with various points of view in regard to such interesting subjects as valence, etc. By use of narrow margins and specially made thin paper this volume has been made very compact. Its dimensions are 20.6×13.7×4.7 cms. H. A. G.

Practical Experiments in Heat, by Griffith and Petrie; *Practical Experiments in Light*, by Griffith and Petrie. Published by Rivingtons, London, Eng. These small laboratory manuals contain nothing very original, as there is an ample supply of books that cover the same ground in very much the same manner. The experiments are all good and require only simple apparatus. G. A. C.

Electrical Laboratory Course for Junior Students, by Professor Magnus Maclean. Blackie and Son, London. 120 pages. 2*s*. The experiments in this manual are too difficult to be performed in secondary schools. Besides the apparatus necessary is not found in Canadian High Schools. While many of the suggestions and methods are good, it would not prove a very useful book to Canadian teachers. G. A. C.

How to Know the Mosses, by Elizabeth Dunham. Houghton Mifflin Company, Boston. $1.25. 287 pages. Manuals for the identification of common plants and animals in a very simple manner are a welcome product of the last few years. At last we have such a manual for the mosses. These small plants, which make so many of the ugly places in nature green, are well worth one's acquaintance. Not even a hand lens is required with the book under review in order to identify many of these delicate little plants. Keys based on the general habit, form and arrangement of leaf and form of capsule are given. G. A. C.

The Nature and Development of Plants, by Carlton Curtis. Henry Holt and Company, New York. 506 pages. Though the present edition of this book has been published for almost two years, it is not as well known among Canadian teachers as it deserves to be. It is a text-book in botany of moderate size; it covers well the work done in the Upper School in Ontario; it contains chapters on the leaf, stem, root, and flower. Then a systematic account of the vegetable kingdom is taken up. The book avoids technical names as much as possible, which is a very commendable feature. The illustrations are excellent, and many of them are new. Another good feature is that the descriptions of the structure and functions are admirably blended G. A. C.

A Glossary of Botanical Terms, by B. D. Jackson. Duckworth & Company, London. 428 pages. 7*s*. 6*d*. This is the third edition of the standard work of its kind in the English language. It gives the pronunciation, derivation, and significance of every botanical term used in the language. For the teacher of science such a work has a certain value. However, as the tendency of authors at the present time is to use as few technical words as possible the necessity for such a book will become less and less. This book is the best of its kind. G. A. C.

Schemes of Work and Approved Time-Tables. Price 2*s*. 6*d*. net. Evans Bros., London. Though prepared primarily for English schools, it contains many suggestions for every teacher. W. J. D.

Quintana's *La Vida de Vasco Núnez de Balboa*, edited by E. Alec Woolf. Price 1*s*. 6*d*. George G. Harrap & Co., London. A Spanish text suitable for a second-year class. The subject is interesting. The editor's work is well done, the vocabulary offering useful assistance in irregular verb forms. D. E. H.

The Post of Honour, by Dr. Richard Wilson. Pages, 160. Price 25 cents. J. M. Dent & Sons, Toronto. This book is recommended for supplementary reading by the Ontario Department of Education. It contains 35 stories of daring deeds done by men of the British Empire in this war, such as "Warneford and the Zeppelin", "The Canadian Scottish", "The Story of Edith Cavell". "The Canadians at Vimy Ridge". These stories are written so that boys and girls can read them easily. Considering the excellence of the book and the price of it, one would think that no teacher could fail to include it in the supplementary reading for this year. From every standpoint it is ideal. W. J. D.

Continued on page 624.

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The United States and The War, by James M. Beck. 46 pages. The Pennsylvania Society, 249 West 13th Street, New York. This pamphlet contains two addresses by James M. Beck, president of the Pennsylvania Society, the one delivered before the society, and the other at a meeting of the Pilgrims, London. The editorial comment of the London *Daily Telegraph* concludes this well compiled booklet. These speeches present in a favourable light the position of the United States before that country became involved in the war. The High School library needs this publication to assist pupils to a clear understanding of the cordial relations existing between the leaders in Britain and the United States even in the earlier stages of the great conflict now raging. F. J. H.

Persephone, by Katherine Merryman. Price, in paper, 6*d*. Geo. G. Harrap & Co., London. This is a delightful poetic dramatization of the old legend of Persephone and Pluto. It might be a little difficult to produce such a play in school, but it is very suitable, indeed, for reading in High School classes. For the convenience of teachers who wish to stage the play an edition with music has been prepared, price 2/6. G. M. J.

Dramatization, by Sara E. Simons and Clem Irwin Orr. Scott Foresman & Co., Chicago. The authors of this very useful, suggestive volume aimed "to give practical suggestions for the dramatization of High School classics", and have succeeded in producing a book which will certainly be welcomed by teachers who are interested in the writing and staging of plays by High School pupils. The book is thoroughly practical. After a few pages on the psychology and pedagogy of dramatization, there follow forty pages of suggestions about the dramatizing of classics, staging, and costuming. Various parts of well-known books are mentioned as suitable for dramatization; staging and costuming are suggested for each. Finally the authors furnish examples of dramatized episodes from about twenty classics, among which are found *Treasure Island, Ivanhoe, The Odyssey, The Iliad, The Canterbury Tales, The Idylls of the King* and *Comus*. These dramatizations are divided into work for four years, and for the convenience of teachers and pupils the four parts are published separately in paper at 20 cents each. G. M. J.

Meditations of Marcus Aurelius. Translated and annotated by J. G. Jennings. Pages 131. Blackie & Son, Limited, London.

Hints that Win Success. Price 3*s*. 6*d*. net. Evans Bros., London. When teaching that the circumference of a circle is 3 1/7 times the diameter, did you ever take the class out into the yard, have a boy measure the diameter of a bicycle wheel, put a chalk mark on the tyre and wheel it in a straight line until the mark has been twice transferred to the ground? Have you thought of a good use for old slates and filled exercise books? Would you like to have at hand 243 devices for dealing with all sorts of situations in school life? This book contains only "wrinkles", new and old, which skilled teachers have found useful. Containing such an acccumulation, it is of value to any teacher; to the beginner it is a veritable storehouse. W. J. D.

The New Era in Canada, edited by Dr. J. O. Miller, Principal of Ridley College. 421 pages. Price $1.50. J. M. Dent & Sons, Toronto. *All profits from the sale of this book are to go to the Canadian Red Cross*. There are 16 essays by well-known writers, among them Stephen Leacock, Peter McArthur, Marjory McMurchy, Sir John Willison. What kind of new era are we preparing for in Canada? Do we realize what our duties are as citizens? What do we know of the problems that may confront us? This book will make us think, and that is at least a beginning. Its purpose, as stated by its editor, "is twofold. 1. To awaken the interest of Canadians in problems which confront us as we emerge from the adolescence of past years into the full manhood of national life. 2. To urge that the test of national greatness lies in willing service to the state by its citizens and to point out, so far as possible, opportunities for service". This is an excellent book. The time ahead will require the utmost thought and labour of every real citizen. These essays will help us to realize where our duty lies. W. J. D.

A Descriptive Bibliography of Measurement in Elementary Subjects: Harvard Bulletins in Education, volume V, 1917. Harvey W. Holmes, editor. Pages vi+46. The measurement of educational results has assumed such large proportions that it is exceedingly difficult to keep up with the literature devoted to it. The above bibliography, therefore, fills a very real need. The table of addresses of the publishers of the various *standard tests* adds value to the publication. P. S.

Dupont's En Campagne. Price 1*s*. 9*d*. net. George G. Harrap & Co., London. A collection of war narratives in French, with notes, passages for re-translation, and vocabulary.

Continued on page 626.

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Methods of Teaching Object and Memory Drawing, by J. Golden. Price 2*s* 6*d*. net. The Educational Company of Ireland, Dublin. This is intended for teachers of drawing in primary and secondary schools, and will be found suggestive and helpful. W. J. D.

Louis Agassiz as a Teacher, by Lane Cooper. Price $1.00. The Comstock Publishing Co., Ithaca, N.Y. This is a very interesting little volume. When the question was put to Agassiz, "What do you regard as your greatest work?" he replied: "I have taught men to observe". And in the preamble to his will he described himself as "Louis Agassiz, Teacher". Agassiz was the friend of Longfellow, Lowell and Whittier; he was the friend of labourers and fishermen. The book tells how Agassiz taught several prominent American educationists of our day. Every teacher will enjoy this book and will receive profit from reading it. W. J. D.

Getz's Practical French Course. Price 2*s*. 6*d*. The Educational Company of Ireland, Dublin. "Though this volume is intended for beginners of all ages, the needs of pupils passing from elementary to secondary schools at the age of twelve or thirteen have been kept specially in view. . . . The reading lessons, which deal mainly with subjects of daily life in school or at home, will give the pupil a live and practical knowledge of the language". Teachers of French will find this book suggestive. W. J. D.

Merkbuch, by Basil Readman. Blackie & Sons, Glasgow. This is a note book for the use of those studying German.

How the Present came from the Past. (Book I—The Seeds in Primitive Life), by Margaret E. Wells. Price 56 cents. The Macmillan Co., Toronto. This book is intended for young children and should be very suitable for Second and Third Book Classes. It outlines man's development in civilization during the Stone Ages. Part II contains a number of myths and legends. The illustrations, which are numerous, add greatly to the interest of the story. W. J. D.

My Book of Best Stories from History, by Hazel Phillips Hanshew. Price $1.50 net. Cassell & Co., Toronto. The present reviewer has often expressed in these pages his conviction that history can be taught with less labour and with much better results if it be given to the pupils in a succession of vivid narratives. Taught in this way, history becomes a recreation and children read it of their own volition; it is not disliked as it has been when it lacked interest. For this method of teaching the subject, the book under review is excellent. Note this from the preface. "History is not a string of dates, such as boys and girls sometimes have to learn at school. It is much more a string of stories such as poeple of all ages—and children especially—love". This book contains 52 admirable stories, and 12 full-page coloured illustrations. Teachers are urged to make it a part of the school library. There is not one dull story in it. These stories are the *meat* of history; the reigns, dates, etc., are the *bones*, the skeleton. This volume helps to make the people of history *live* in the child's imagination. As a prize or gift book it could scarcely be excelled. W. J. D.

Bi-lingual Schools in Canada, by Professor C. B. Sissons. Price $1.35. Published by J. M. Dent & Sons, Ltd., Toronto. No greater educational problem confronts our Dominion and provincial statesmen to-day than that which includes the education and training of the thousands of children—and adults—of foreign nationalities who have thrown in their lot with us. Obviously the teaching of English is one of the vital phases of this problem. The method to be used in accomplishing this has occasioned considerable controversy in various parts of the Dominion, especially where bi-lingualism has been introduced. Professor Sissons in this most interesting book has gone fully into the question of bi-lingualism in each of the provinces concerned. His discussion of conditions in the prairie provinces is to the point and should be read by every teacher. The average Canadian citizen knows but little of the "foreigner" and too few Canadian writers have given this problem much attention. May this little volume be but the forerunner of many similar works by our leading educational men and women!

J. T. M. A.

An Introduction to the English Classes, by William P. Trent, Columbia University, Charles L. Hanson, Mechanic Arts High School, Boston, and William T. Brewer, Columbia University. 302 pages. Price 60 cents. Ginn & Co., Boston. We have here a revised edition of a book which many teachers of literature have already found very helpful. In Part I under the title "Approaching Classics" the authors give very useful suggestions concerning the study and teaching of literature; in Part II outlines are given for the classroom treatment of a large number of the "English Classics" which are commonly studied in the United States in preparation for the College Entrance Examinations. At the end of the volume is a list of books suggested for supplementary reading. Canadian teachers, particularly inexperienced ones, will find this book very helpful. G. M. J.

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An old gentleman heard the tutor tell his son that the earth revolves every twenty-four hours. So he put a glass of water on his garden wall, and left it all night.

Next morning he went to the tutor and discharged him, saying:

"It is all rubbish about the earth going round, because if it did all the water would have run out of the glass."

At the supper table the conversation turned upon the junior second Public School reader, brought home for the first time by my little son, Max, aged 8. His mother referred to one of the poems in the reader, entitled "The Children's Hour," as having appeared also in one of her school readers when she was a Public School pupil. Upon this I enquired: "That's one of Longfellow's, is it not?" Before she could reply the proud owner of the reader quickly interjected: "No, dad, it's a very short one."*W. F. Ralph.*

"So you confess the unfortunate young man was carried to the pump and was drenched with water. Now, Mr. Fresh, what part did you take in the disagreeable affair?" Undergraduate (meekly): "The left leg, sir."

Teacher Natural History Class: "You will remember, will you, Tommy, that wasps lie in a torpid state in the winter?" Tommy (with an air of retrospection): "Yes'm, but they make up for it in the summer."

"I am delighted to meet you," said the father of the college student, shaking hands warmly with the professor. "My son took algebra from you last year, you know." "Pardon me," said the professor; "he was exposed to it, but he did not take it."

During a lesson on the animal kingdom, says *The Illustrated London News*, the teacher asked if any one could give an example of an animal of the order of edentata, that is, one which is without teeth.

"I can!" cried Reginald, his face beaming with the pleasure of assured knowledge.

"Well, what is it?" said the teacher.

"Grandpa!" he shouted.

A teacher in a lower grade was instructing her pupils in the use of the hyphen. Among the examples given by the children was the word "bird-cage."

"That's right," encouragingly remarked the teacher. "Now, Paul, tell me why we put a hyphen in bird-cage?"

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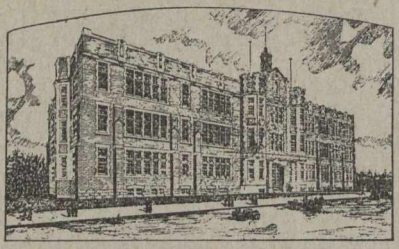

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The Competition in Art

Conducted by

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RULES FOR COMPETITORS.

1. The work must be original and must be so certified by the teacher.

2. All work must be on drawing-paper of dimensions either 6″ x 9″ or 9″ x 12″.

3. Drawings must be sent flat—not rolled. Rolled packages will not be sent on to the committee of judges.

4. Sufficient postage for return must accompany each package. If this rule is not observed, drawings will not be sent on to the committee.

5. Work entered for the February competition is to be done during January and must reach this office not later than February 8th; that for March is to be done during February and must reach this office on or before March 8th and so on.

6. The three best pieces of work, if they are deserving, will be awarded prizes in order of merit—first, second, and third.

For Public and Separate Schools.

	A. Forms I and II or Grades 1, 2, 3, 4.	B. Forms III and IV or Grades 5, 6, 7, 8.
FEB.	A coloured crayon drawing of a Christmas toy from memory. To be done in the classroom without the teacher's direction on the day following a lesson in which a drawing was made by the pupils from the object under the teacher's direction.	Construct a letter holder in the form of a wall pocket, as large as can be made from paper 12″ x 9″. Tint the whole sheet. Any further decoration should be done in water colours. Leave undecorated margins of good proportions.
MARCH	A coloured crayon design of an Easter card lettered with simple capitals.	An illustrative drawing, finished in water colours, of any of the numerous lines suitable for illustration from "A Canadian Camping Song", page 65, Third Reader.
APRIL	A simple design in charcoal or black crayon for a figured muslin or checked gingham for girls; prints or suitings suitable for boys.	A black and white surface pattern in line and spot for any printed fabric—curtains, scarfs, dress goods, papers, etc.
MAY	An ink silhouette of a pose selected from some sport or game in which boys and girls are interested.	A pencil drawing of a small group of kitchen or garden utensils. All lines used in blocking in the group should be left.
JUNE	An illustrative drawing in one colour, black and white, of some word picture suitable for illustration, taken from the First or Second Reader.	1. A water colour drawing of a spring flower. 2. A simple, conventionalized unit based upon the same flower. 3. Adaptations of this unit to fit a square, an oblong, and a circle. The best arrangement of all the above drawings on one sheet 12″ x 9″ will also be considered.

The Competition in Art

Prizes.—Twelve prizes are awarded each month, three in each of the four competitions. These prizes are donated by the Prang Company of Chicago, New York, and Toronto (23 Scott Street).

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Competitions C and D.—*First*—Prang's Tempera Box, No. 1. *Second*—Prang's Water Colour Box, No. 8. *Third*—Art Education Crayons, No. 2.

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	C. Lower School *First and Second Years.*	D. Middle School *Third and Fourth Years.*
FEB	Make a *pencil* drawing of a primula or a begonia, or other winter-blooming house-plant in the pot. Express light and shade and colour value. Make the drawing at least 8 inches at its greatest dimension.	Design a teapot and decoration for it suggested by Saracenic or by Greek ornament. Express the completed design in a contrasted colour harmony. Make the teapot about 7 inches high.
MARCH	Represent in *water colours* the house-plant chosen for the pencil sketch in the February competition. Make the drawing at least 8 inches at its greatest dimension.	Make a *pencil* drawing of an interesting detail of some *Gothic building* you know, such as the entrance to a church or college, or a clock tower, or a mullioned window.
APRIL	From the primula, or from the house-plant chosen for the January and February Competition, *design an ornament* for a selected piece of pottery. Draw this piece of pottery and apply the ornament in colour to make a dominant harmony.	Make a *pencil* drawing, 10 inches high, of a library electric lampstand and shade. The stand may be of brass or of wood; the shade may be circular and domed, or square and pyramidal.
MAY	Make a *pencil* drawing, at least 8 inches in width, of a small table book rack, in which a few books are standing. Draw an open book in front of the rack. Show the top of the table. Composition, lighting, colour values, perspective and pencil technique will be noted.	Make, in *pencil*, a perspective drawing of the end of a room, showing the end wall and a portion of the ceiling, side walls and floor. Place a window on the left side, a door opening out on the right side and a door opening into the room in the end, facing the spectator. Add other appropriate details.
JUNE	Design a cover, 4 ins. by 9 ins. for a box for neckties. The decoration is to be of some simple floral motive, and the lettering may be either in Roman or in Gothic letters of appropriate size.	Design a menu cover for a *Thanksgiving Day Banquet.* Use appropriate ornament in form and colour. Letter with Gothic or Roman letters.

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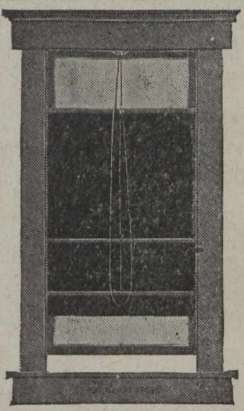

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